Exhibit 14.21

United States' Motion to Enter Consent Decree,
United States v. Alden Leeds, Inc. et al., Civil Action No. 22-7326 (D.N.J.)

EXHIBIT A-64

Appendix A to OxyChem's Comments in Opposition to Proposed Consent Decree, *United States v. Alden Leeds, Inc., et al.*, Civil Action No. 2:22-cv-07326 (D.N.J.)

SITE CHARACTERIZATION SUMMARY REPORT ADDENDUM

Riverside Industrial Park Superfund Site, Newark, Essex County, New Jersey

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COMMITMENT & INTEGRITY DRIVE RESULTS

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October 2018

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1. INTRODUCTION

This Site Characterization Summary Report (SCSR) Addendum is submitted on behalf of PPG, Inc. (PPG) pursuant to the Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the Riverside Industrial Park Superfund Site (Site). The RI/FS Work Plan was approved by the U.S. Environmental Protection Agency (USEPA) on August 1, 2017. The objective of this document is to provide Phase 1 findings related to the nature, extent and source of contamination and site characteristics.

The Site is 7.6 acres and is located in Newark, Essex County, New Jersey (Figure 1-1). The majority of the Site was reclaimed from the Passaic River with imported fill in the late 1800s/early 1900s. The Site housed paint and varnish manufacturing operations from approximately 1902 until 1971. Since then, the Site has continued to be used for a wide variety of industrial purposes by numerous companies and has been subdivided into 15 lots. Both Riverside Avenue and McCarter Highway border the Site to the west along with a segment of railroad track adjacent to McCarter Highway (Figure 1-2). Several of the lots have deed notices regarding engineering controls related to the state remediation program (Figure 1-3).

At the time of Phase 1, Buildings. #1, #2, #3, #9, #10, #13, #14, and #16 had ongoing business operations. Portions of Lot 12 and former Building #4 had vehicle dismantling activities during some of the Phase 1 investigation. Surface waste piles on the south portion of the Site and Building #7 asbestos containing materials were removed by USEPA during Phase 1 but were not part of the Phase 1 investigation.

The RI Phase 1 tasks implemented include the following:

- Property Owner Notification
- Site Survey
- Building Safety Assessment
- Additional Record Review
- Local Groundwater Use
- Subsurface Piping Evaluation
- Waste Management for Investigation-Derived Waste (IDW)
- Soil Sampling and Analysis
- Temporary Well Point (TWP) Installation and Sampling
- Container Inventory, Sampling, and Analysis
- Sewer Sampling and Analysis
- Existing Monitoring Well Assessment
- Monitoring Well Installation, Development, and Survey
- Groundwater Gauging
- Groundwater Sampling and Analysis
- Sump Sampling and Analysis
- Aquifer Characterization Testing
- River Wall Assessment
- Soil/Sediment Comparison
- Vapor Intrusion (VI) Screening
- Reuse Assessment
- Cultural Resource Survey
- CSM Update

A separate Candidate Technologies Memorandum was submitted to the USEPA on September 24, 2018.

2. ADMINISTRATIVE AND PRE-FIELD SAMPLING ACTIVITIES

2.1 PROPERTY OWNER NOTIFICATION

Copies of the USEPA approved RI/FS Work Plan were provided to each property owner at the Site. Owners were also notified of the initiation of Phase 1 activities at the Site. At the start of the Phase 1 investigation, the property owners by lot are:

Lot Number	Owner
1	Hatzlucha on Riverside, LLC
57	Plagro Realty, Inc.
58, 61, 63, 64, 68	City of Newark
59	Albert Sharphouse
60	Shefah in Newark, LLC.
62, 67	Ceclor Associates, LLC.
65	Industrial Development Company
66	Chemical Compounds, Inc.
69	Sharpmore Holding Inc.
70	Estate of Carole Graifman

Figure 2-1 has been updated listing the owners and location of the lots along with identification of vacant buildings.

2.2 SITE SURVEY

In early 2016 with USEPA concurrence, a site base map was developed to document existing surface conditions including lot boundaries, building locations, utility locations, and pavement boundaries. The information was used to develop a site map and for documentation of sampling locations and site features. The site map was updated and utilized in Phase 1.

2.3 BUILDING SAFETY EVALUATION

In August 2017, a structural evaluation of select structures and buildings was conducted to evaluate safety considerations related to proposed sampling locations. The area observed included the former Building #4 dike area, the Building #10 dock area, and Buildings #12 and #15.

2.3.1 Former Building #4 Dike Area

The west wall of the former aboveground storage tank (AST) dike area used by Samax (also former Building #4 historically) was partially collapsed adjacent to the railroad tracks. Two soil borings (B-1 and B-2) were planned for the dike area floor. The structural survey determined unsafe conditions were present; therefore, with USEPA concurrence, the borings were moved to outside the potential fall zone of the remaining wall. The revised locations were still within the dike area.

2.3.2 Building #10 Dock Area

Building #10 is a four-story concrete and masonry building. There is a concrete paved dock area 14 feet in width along the east side of Building #10 between the building and the river. There is a concrete wall along the river, which is approximately 18 inches thick at the top. Three soil borings were planned on the dock area slab, plus a TWP, monitoring well, and installation of a river gauge. The planned work in the dock area was determined to be safe given that key components of the area (building, dock slab, and river wall) were monitored for movements and/or cracks during these activities on the dock area.

2.3.3 Building #12

Building #12 is a vacant concrete and masonry building with five stories and a basement. Safe access was present to the first floor; however, the evaluation determined safe access to the basement and upper floors of the building was not possible due to deteriorating interior stairwells as well as the exterior fire escape. Since a container inventory is part of the scheduled Phase 1 tasks (Section 5.1), access was required to each of the upper floors. An aerial lift was determined to be the safest way of accessing the upper floors of Building #12. Select window panes on each floor were removed to gain entry followed by securing plywood to the opening. A ladder was used to access the basement of Building #12.

2.3.4 Building #15

Building #15 is a vacant concrete and masonry building with a large open interior space approximately 40 feet in height. There are multiple steel ASTs inside the building. The exterior metal stair on the north side of the building and an exterior metal ladder platform on the south side of the building were determined to be structurally unsound. Likewise, a large wall opening partially infilled with concrete on the east side of the building was also deemed structurally unsound. The container inventory (Section 5.1) was also proposed inside Building #15; therefore, access was required. Demolition of the northern metal staircase combined with the use of an aerial lift to access the doorway at the top of the metal staircase was determined to be the safest way to access Building #15.

2.4 ADDITIONAL RECORD REVIEW AND INTERVIEWS

Additional information was obtained from Licensed Site Remediation Professionals (LSRPs) for on-site New Jersey Department of Environmental Protection (NJDEP) cases, from NJDEP file reviews completed in February and March 2018, and from subsequent conversations/interviews with site occupants and/or owners. Additional information presented in this section contains updates to the April 15, 2015 SCSR for the Riverside Industrial Park Site and reflects information obtained for NJDEP cases. Comparison of results to New Jersey standards (not Project Action Levels [PALs]) below are from the Industrial Site Recovery Act (ISRA) case documents referenced and have not been verified by PPG or Woodard & Curran.

It is noted that USEPA issued a letter on April 1, 2016 notifying property owners/potentially responsible parties (PRPs) that lots of the Site being remediated via the NJDEP LSRP program would need to be addressed by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §9601 et seq. ("CERCLA") and that going forward, the Site (Riverside Industrial Park Superfund Site) must be addressed under the federal Superfund program, not the LSRP program. The distribution list of the USEPA letter was as follows:

29 Riverside, LLC
Allied Signal, Inc., *f/n/a* Baron Blakeslee, Inc. (BBI)
Celcor Associates, LLC
Chemical Compounds, Inc.
City of Newark
Color Enterprise LLC
Frey Industries, Inc.

Gloss Tex Industries, Inc.
Graifman, Carole
Haba International Inc.
Industrial Development Associates
Industrial Development Corporation
Placa, James
Plagro Realty Inc.
PPG Industries Inc.
Sharphouse, Albert
Sharpmore Holdings, Inc.
Universal International Industries. Inc.

Per the RI/FS Work Plan, copies of recorded deed notices with as-built engineering control details for Lots 61, 63, 67, 68, and 70 are provided in Appendix A.

Honeywell International, Inc. (Honeywell) (Lots 61, 63, 67, and 68) – PI #G0000005586

As reported in the SCSR, deed notices for the City of Newark properties (Lots 61, 63, and 68) and the Celcor Associates, LLC (Lot 67) are in place identifying an engineered cap related to impacted soil (SCSR Figure 26). BBI/Allied Signal/Honeywell is named as the responsible party for maintaining the engineering controls. Honeywell submitted a Classification Exception Area (CEA)/Well Restriction Area fact sheet to NJDEP in August 2016. The CEA indicated "historic fill" as the contaminant with no specific contaminants of concern listed. The historic fill CEA was for an "indeterminate" duration. The boundaries of the historical fill CEA are in general agreement with the limits of the engineered cap areas identified within the deed notices. The 2016 CEA submitted on behalf of Honeywell is provided in Appendix A.

Samax (Lot 1) – PI #563216

A Remedial Investigation Report (RIR, Envirotactics, Inc., 2017) was completed in 2017. The 2017 RIR and CEA for Lot 1 submitted on behalf of Samax (former Lot 1 tenant) is provided in Appendix A.

In May 2013, nine soil borings (BE-6 through BE-14) were installed along the eastern exterior of the AST farm and in the area of the historic fill to better evaluate 2008 and 2010 soil concentrations above NJDEP standards. Several soil borings were also installed in the accessible areas north and east of Sample BE-2/TWP-2 to determine the toluene source. Evidence of petroleum contamination was observed in Soil Borings BE-8, BE-10, BE-11, and BE-14 from approximately 5 to 10 feet below grade. A total of 13 soil samples were collected from each soil boring at depths biased toward the highest field screening readings and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs)+10, TCL semivolatile organic compounds (SVOCs)+20, and Target Analyte List (TAL) metals. Soil Samples BE-8, BE-9, and BE-13 detected benzo(a)pyrene and/or lead above their respective Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS), Residential Direct Contact Soil Remediation Standard (RDCSRS), and/or Impact to Groundwater Soil Screening Level (IGWSSL). Methylene chloride and bromomethane were also detected above the default IGWSSL in Samples BE-6, BE-9, BE-10B, and BE-11B; however, these samples were collected from beneath the water table and therefore the IGWSSL do not apply.

In May 2013, four groundwater samples (TWP-3 through TWP-6) were collected from points installed in soil borings BE-6, BE-8, BE-9, and BE-11. The samples were analyzed for TCL VOC+10 and TCL Base Neutral (BN)+15; TAL metals were not sampled due to high turbidity in the TWPs. The only identified exceedance was a VOC total tentatively identified compound (TIC) concentration, which was reported at a concentration of 1,080 parts per billion (ppb) in TWP-6. As there were no toluene exceedances, it was determined the horizontal extent was confirmed by these TWPs, and four permanent monitoring wells were installed along the eastern side of the AST farm. Four groundwater sampling events were completed at these wells, each sampled for TCL VOCs+15, TCL BN+20, and/or TAL metals. No VOC+15

compounds were detected in any of the monitoring wells above their respective GWQS during the two most recent events. Arsenic was detected above the GWQS in MW-1 during the August 2013, July 2014, and April 2015 sampling events. Only metals exceeded applicable New Jersey GWQS.

In the 2017 RIR, the only remedial action proposed was for historic fill and included the implementation of engineering and institutional controls to address soil contamination and a historic fill CEA for groundwater. The historic fill CEA indicates arsenic, iron, lead, manganese, and sodium concentrations above the NJGQS are a result of historical fill. A Remedial Action Report (RAR) with Remedial Action Permit (RAP) for Soil was proposed; however, neither document was identified during a review of NJDEP files, and no evidence of a RAP or CEA was available on the NJ-GeoWeb online mapping tool.

Roloc Film (Roloc)/Color Enterprises (Lot 60) – PI #467682

The 2017 RIR/Remedial Action Workplan (RAWP, First Environment, Inc. [First Environmental]. 2017) discussed supplemental activities conducted related to a former AST pad on Lot 60. In May 2009, Roloc's contractor Whitman collected 13 soil samples (SB-PAD-1R, SB-PAD-3R, SB-PAD-5, SB-PAD-5, SB-PAD-5D, SB-PAD-6, SB-PAD-6D, SB-PAD-7, SB-PAD-7D, SB-PAD-8, SB-PAD-8D, SB-PAD-9, and SB-PAD-9D) adjacent to and below the former AST. Samples were collected between 5.5 and 9 feet below ground surface (bgs) and sampled for TCL VOCs. One sample, SB-PAD-5D, had a concentration of benzene, 0.553 parts per million (ppm), which is below the NJDEP RDCSRS but exceeds the NJDEP Default IGWSSL. All other samples were either not detected or detected below the most stringent applicable NJDEP standard.

During the May 2009 investigation, a TWP was installed to a depth of 10 feet bgs near the southwest corner of the former AST pad. One groundwater sample was collected and analyzed for TCL VOC+10. Trichloroethene (TCE) and tetrachloroethylene (PCE) were identified at concentrations (both 1.78 ppb) exceeding the NJDEP GWQS of 1 ppb. Subsequently, a monitoring well (MW-1) was installed in May 2012 by First Environment to a depth of 15 feet bgs. A groundwater sample was collected in June 2012 from MW-1 and analyzed for TAL metals and TCL VOC+15. The following compounds were identified above their respective GWQS: mercury (5.9 ppb), arsenic (12 ppb), total chromium (84 ppb), lead (330 ppb), aluminum (11,000 ppb), iron (33,000 ppb), and manganese (90 ppb).

In March 2017, First Environment began further characterization of the nature and extent of VOCs in soil adjacent to and below the former AST pad. Six soil borings (PAD-1, PAD-1N, PAD-1S, PAD-1W, PAD-5, and PAD-5W) were completed with one sample collected from each location. All VOCs were either not detected or detected below the most stringent applicable NJDEP standard. Following these investigations, First Environmental determined that no further action was required for the soil adjacent to and below the former AST pad, as detectable concentrations of VOCs identified above the IGWSSL were only identified at a depth below the seasonally high groundwater table and not within the unsaturated zone.

In March 2017, First Environmental collected an additional groundwater sample using low-flow sampling techniques to be analyzed for polychlorinated biphenyls (PCBs), TCL BN+15+SIM, and TCL VOCs+15, including 1,4-dioxane. 1,4-dioxane was detected at a concentration of 0.7 ppb, exceeding the NJDEP Interim GWQS of 0.4 ppb. Other VOCs were either not detected or detected below the NJDEP GWQS. No concentrations of polycyclic aromatic hydrocarbons (PAHs) or PCBs were detected. Based on these analytical results, First Environmental in April 2017 collected another groundwater sample for 1,4-dioxane. There were no detectable concentrations of 1,4-dioxane in that sample. A final confirmatory sample was collected from MW-1 in May 2017. As with the April 2017 event, no concentrations of 1,4-dioxane were detected. Following these investigations, First Environmental determined that no further action was required for groundwater in this area other than a CEA for historic fill impacts to groundwater. The historic fill CEA indicated mercury, arsenic, aluminum, chromium, iron, and lead concentrations were above the NJGQS. The 2017 RIR/RAWP and CEA submitted on behalf of Roloc is provided in Appendix A.

2.5 LOCAL GROUNDWATER USE

Prior NJDEP cases have conducted well searches as part of receptor evaluations and identified no domestic wells or irrigation wells within one-half mile of the Site. The most recent receptor evaluation (March 2005) was conducted as part of the RIR for Lot 70. Subsequent updates to the receptor evaluation, including one in 2017, indicated the same finding of no domestic wells or irrigation wells within one-half mile of the Site.

As part of the RI Phase 1 activities, potential groundwater receptors within one mile of identified groundwater contamination were evaluated via the NJDEP dataminer computer radius report during Phase 1. The X&Y well search spreadsheet is provided in Appendix B along with other well search documents. The X&Y well search identified over 2,000 permits/records within one mile of the Site (Figure 2-1). This list was pared down by removing the wells related to monitoring and remediation, as well as other non-groundwater removal well uses and decommissioned wells. The resulting list of 94 well permits and/or records included wells with the following well uses in order of prevalence: industrial wells (68), domestic wells (13), dewatering wells (6), irrigation wells (4), geothermal wells (2), and public water supply wells (1). Forty-seven of these wells are located in Essex County on the west side of the Passaic River. Note that 61 of the 94 well entries are for permits only and signifies that permission was granted for the installation but is not proof that the installation occurred.

The following six wells were identified as being within 1,000 feet of the Site and considered for follow-up through the New Jersey Bureau of Water Allocation and Well Permitting.

Well ID (see Figure 2-1)	Permit Number	Use	Potentially Potable	Document (Permit or Record)	Document Date	Depth (feet)
1	P200804238	Dewatering	No	Permit	12/15/2008	40
2	P200804237	Dewatering	No	Permit	12/15/2008	40
3	P200804236	Dewatering	No	Permit	12/15/2008	40
4	P200804235	Dewatering	No	Permit	12/15/2008	40
67	2600002131	Industrial	Yes	Permit	10/26/1959	400
91	E201405369	Irrigation	Yes	Record	6/19/2014	322

Hard copies of the well permits and/or records for the 94 wells identified above within 1 mile of the Site were requested from the New Jersey Bureau of Water Allocation and Well Permitting as well as a one-mile radius Water Allocation Diversion search. The additional requested information has not been obtained to date but will be reviewed during Phase 2.

3. SOIL BORING PROGRAM

3.1 SUBSURFACE UTILITIES AND ANOMALIES EVALUATION

A subsurface pipes, utilities and anomalies evaluation was conducted in conjunction with locating utilities prior to soil sampling and monitoring well installation. THG Geophysics Ltd. (THG) conducted a sitewide geophysical survey in September 2017 with follow-up investigations in November 2017 and June 2018. THG utilized radio detection, frequency induction electromagnetics, 60 hertz locators, snaking sonde, and ground penetrating radar (GPR). The effective depth of these techniques depends on several factors including soil type and surface inferences (i.e., metal fences, metal staircases, and other surface metal). Surface observations of utilities (e.g., fire hydrants, manholes, etc.) were also part of the evaluation.

The September 2017 survey focused on locating subsurface utilities for soil sampling and monitoring well installation. Following the removal of surface waste by the USEPA, the November 2017 survey was conducted on previously inaccessible areas and other pipes. Information gathered in these two surveys were used in conjunction with the sewer assessment (Section 6.1).

Utilities located included gas, water, electric, sewer and telephone pipes/lines (Figure 3-1). Location of underground storage tanks (USTs) were detected. Also, numerous unknown anomalies were detected. The survey readings of these anomalies could not determine the cause. Surface observances did not provide information of an anomaly source. Causes of anomalies could be discarded debris, abandoned underground utilities (i.e., power, gas, water), current underground utilities, sewer pipes, and/or underground transfer pipes. Table 3-1 lists the sewer pipes and subsurface anomalies noted on Figure 3-1.

Several historical reports present subsurface tunnels or covered utility trenches containing piping. Phase 1 observations indicate a probable tunnel exists between Buildings #12 and #7. Pipes and a doorway are present in the northeast corner of Building #12 basement. The base of the tunnel was below the basement floor level of Building #12. The tunnel was partially filled with water to the level observed in the Building #12 basement. The pipes have not been observed in Building #7. There is no known access point in Building #7 to the tunnel pipes.

Also based on surface observations (concrete pathway), there may be a tunnel or utility corridor between Buildings #17 and #12. If this corridor existed, it would not be expected to be very deep as it must pass over the Herbert Street Combined Sewer Outfall (CSO) limiting its depth.

3.2 PROJECT DECONTAMINATION AND WASTE STORAGE

During Phase 1, activities involving soil sampling, monitoring well drilling and installation, groundwater sampling, and container/sewer sampling, decontamination of field equipment was emphasized to minimize cross contamination between various sample locations as well as reduce possible health hazards and the spread of contaminants off-Site. Decontamination pads were constructed to contain fluids and debris that were generated during the cleaning of sampling equipment and drilling tools. The decontamination process that was followed for the various drilling tools and sampling equipment used at the Site is laid out in Standard Operating Procedure (SOP)-16 which is part of the USEPA approved Quality Assurance Project Plan (QAPP). The decontamination process included a wash of soapy water followed by a distilled water rinse, then a nitric acid rinse, followed by distilled water rinse, an acetone rinse, followed by a final distilled water rinse.

Phase 1 activities also generated various waste streams during the investigation. These wastes were stored on-Site until they could be properly disposed of. The drum storage area consisted of multiple plastic sheets laid out on the asphalt lot on Lot 68. The plastic sheets were bermed at their edges using 2x4's, and ¾ inch plywood was placed on top of the plastic to protect from breakthrough when drums were shuffled onto the pad. The entire drum storage pad was enclosed using orange construction fencing. Each drum stored on the Site was labeled with a pending analysis

label identifying the contents of the drum, when it was generated, and where it was generated. The wastes generated during Phase 1 equipment cleaning activities included purge water, drill cuttings, and/or decontamination water. Further information on IDW generation and disposal can be found within Appendix C.

3.3 SOIL BORINGS

As described in Section 3.1, the proposed boring locations were cleared via a utility survey locator company and NJ One Call. A geographic information system (GIS) global positioning system (GPS) instrument was used to establish the proposed boring locations prior to the clearance survey. As described below, some locations were moved to avoid underground utilities.

As part of the Phase 1 soil sampling program, 77 soil borings were proposed with the possibility of additional borings based upon observations. The locations of the borings can be found on Figure 3-2. Surface soil samples at each location were collected using hand augering methods. If surface sampling could not be completed using a hand auger, direct-push technology was used to collect the sample. After the collection of the surface sample, borings were advanced to 15 feet bgs using a full-size Geoprobe© rig. Continuous soil sampling and headspace screening was performed at each location until total depth was encountered starting with the 0- to 1-foot surface sample interval and then every 2-foot interval after (i.e., 1 to 3 feet, 3 to 5 feet, etc.). A surface soil sample (typically 0- to 1-foot bgs) and a deeper soil sample were collected. Only vadose zone soil samples were collected for laboratory analysis. The subsurface vadose zone soil sample selected for analysis was based on photoionization detector (PID) screening measurements, visual observations or the deepest unsaturated sample collected.

Soil samples were collected from 67 of the proposed 77 locations. At the request of USEPA, two borings (B-78 and B-79) were added near the end of the boring program field activities. Ten borings were unable to be sampled due to either refusal or soil saturation, and two other borings were eliminated without attempting based on field observations (saturated conditions close to surface) found at other borings completed in Building #17 as listed below. The borings listed below did not have soil samples collected:

- **Concrete Refusal:** B-1, B-2, B-21, B-50, and B-72,
- **Soil Saturation:** B-11, B-45, B-47, B-49, and B-73, and
- **Eliminated:** B-46 and B-48.

Borings B-38, B-59, and B-60 are located in two areas where surface fill/debris piles are present. These fill/debris piles were heavily vegetated mounded areas that were located at the former Building #5 location (B-38) and within a former AST area (B-59 and B-60). A vertical composite soil/fill sample was collected at each of these locations from the mounded fill/debris piles. The composite sample was comprised of grab samples collected from the mounded soil above the surface soil sample at each boring location. Once the above-grade fill/debris pile was sampled, direct-push methods were used for continuous soil sample collection to the total depth of the boring. This resulted in three soil samples being collected from each of these boring locations (B-38, B-59, and B-60), as follows:

- One composite soil sample of the mounded material,
- One sample collected at the original ground surface, and
- One grab sample selected for analysis based on PID screening measurements or visual field observations.

A list of soil samples collected for laboratory analysis is provided in Table 3-2. Phase 1 soil samples were analyzed for the parameters listed in Table 3-3. The boring locations were surveyed via GPS equipment. Samples of the silty clay unit beneath the fill material were also collected for classification and permeability testing (Section 4.4). Boring logs are provided in Appendix D.

Soil samples were collected following associated field SOPs. On December 4, 2017, Woodard & Curran, on behalf of PPG, submitted a Field Modifications Memo to the USEPA describing field adjustments that were implemented to the original proposed scope of work for the Phase 1 soil boring and soil sample collection program. The adjustments that were made to reflect conditions encountered and/or at USEPA site representative direction. The Field Modifications Memo is provided in Appendix E.

3.3.1 QA/QC Samples

Field quality control (QC) requirements for the soil samples that were collected during Phase 1 are summarized in the QAPP with the actual counts for quality assurance (QA)/QC samples collected as follows:

- Field Duplicates: 7
- Trip Blanks: 22
- Site Matrix Spike/Matrix Spike Duplicate (MS/MSD): 7
- Equipment Blanks: 5

3.3.2 Geology

As indicated in the SCSR, the majority of the current lots that comprise the Site are located within the footprint of the historical Passaic River tidal flat. In 1901, prior to occupancy/development by Patton Paint Co., the majority of the lots appear to be backfilled with the exception of the northeastern and southeastern corners of the Site (1901 Atlas of the City of Newark). The lots that comprise the Site were created by backfilling at various timeframes throughout history leading to surface soils of the Site being non-indigenous materials. Since the fill material at this Site is considered historical fill, the use of the terms fill, and historical fill are considered interchangeable in this report.

The Site consists of large quantities of fill material that were historically placed into the tidal flat to raise the surface elevation to today's approximate elevation, the majority of which was completed prior to 1901. The fill material consists of soils that are of a silty consistency and man-made materials such as brick, block, glass and cinders. The composition of the fill material is relatively consistent across the Site and ranges in thickness from 6 to 15 feet. Soil samples collected during Phase 1 were collected from fill material in the vadose zone.

Below the fill material, within the saturated zone, is a layer composed of a higher ratio of sand to silt that ranges from fine to medium grain with intermittent clay lenses. The next deeper layer that makes up the geology immediately under the Site is a silty clay layer. Although permeability is lower than the fill material and sands above it, the clay to sand/silt content vary within this zone. The geotechnical samples results (Section 4.4) suggest the confining layer is more of a sandy lean clay at the central portion of the Site but on either end, it grades into a sandier silty zone which can be viewed on geologic cross sections on Figures 3-3, 3-4, 3-5, and 3-6. Groundwater movement within the fill unit would be expected to have a limited vertical component of flow due to the permeability differences between the coarse fill material and underlying fine-grained confining unit.

3.4 SOIL SAMPLE ANALYSIS RESULTS

The soil sample analytical results are summarized in Tables 3-4A through 3-4D and on Figures 3-7 through 3-27. The tables present the detections above reporting limits with a complete list of results in Appendix F. The figures present the parameters that were above PALs in a minimum of 10 samples (combination of surface and subsurface). These figures include VOCs (benzene, PCE, TCE, and methylene chloride), SVOCs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, indeno(1,2,3-c, d)pyrene), metals (arsenic, aluminum, cadmium, hexavalent chromium, lead, manganese, mercury, silver, and zinc), and PCBs (PCB-1254, PCB-1260). Although tetrachlorodibenzoparadioxin (TCDD) results do not meet this criterion for PAL exceedances, they are presented on Figure 3-7.

The paragraphs below briefly summarize the findings. Field duplicate results are presented in the tables, but only primary sample results are provided on the figures. For the purpose of discussion in this report, the site division shown on Figure 1-2 is used to differentiate locations between borings and their associated results. Borings located to the north side of this line are identified as the northern portion of the Site and to the south will be southern portion.

The discussion below includes evaluation of both surface soil results (samples collected between 0 to 2 feet bgs) and subsurface results (samples collected deeper than 2 feet bgs). The designation of surface or subsurface is based upon the start (shallowest) depth of the sample interval.

VOC: Benzene (18 samples), methylene chloride (35 samples), PCE (10 samples), and TCE (17 samples) were the majority of the VOC PAL exceedances. Each of these VOC exceedances occurred in both surface and subsurface sampling intervals. Benzene was detected almost exclusively around the UST farm that is located on Lot 64 and on the Lots 61 and 63. The highest concentration of benzene was from the subsurface sample collected at B-74 on Lot 64 (68,000 ppb). The highest surface sample concentration of benzene was detected in the sample collected at B-35 on Lot 64 (16,000 ppb).

TCE exceedances were located within the northern portion of the Site (Lots 58, 60, and 70) and could also be found in lots located in the southern portion of the Site (Lot 61, 63, and 67).

Methylene chloride was detected in surface and subsurface samples in both the northern and southern portions of the Site. Methylene chloride detections were found in samples in all lots located within the southern portion of the Site with the exception of Lot 62 which had no detections exceeding the PAL. In the northern portion of the Site, only Lots 58, 69, and 70 had soil samples that exceeded the PAL for methylene chloride. Soil Boring B-62, which is located on Lot 69, had no detections of methylene chloride within the surface sample, but did have an estimated detection within the subsurface sample collected at this location. As was the case with TCE, methylene chloride detections were more commonly found within surface soil samples compared to subsurface samples.

PCE detections almost solely occurred within the southern portion of the Site, specifically Lots 61, 64, and 68. Two PCE detections that exceeded the PAL could be found on the northern portion of the Site on Lot 60, Borings B-22 and B-23, however, were estimated concentrations of 41 and 23 ppb, respectively.

VOC TICS: Numerous VOC tentatively identified compounds (TICs) were qualitatively identified in soil samples collected at the Site. The location of the VOC TICS was spread over the Site, but a higher frequency of detections were located on the southern portion of the Site. VOC TICS with five or more hits were also identified in soil borings on the northern portion of the Site and were clustered near the corridor between Buildings #16 and #10 stretching up to Building #15.

SVOC: Benzo(a)anthracene (39 samples), benzo(a)pyrene (100 samples), benzo(b)fluoranthene (38 samples), dibenz(a,h)anthracene (46 samples), and indeno(1,2,3-c,d)pyrene (22 samples) were the most frequent SVOCs that exceeded the PALs. Benzo(a)anthracene was detected in both the northern and southern portions of the Site, but exceedance detections of the PAL for this compound were more prevalent within the southern portion of the Site's surface soil samples. The location of most of the surface detections of benzo(a)anthracene PAL exceedances could be found on Lots 61, 64, 65, 67, and 68. Most of the subsurface detections of benzo(a)anthracene are located between Buildings #7, #12, and #17. Figure 3-12.

Benzo(a)pyrene was detected sitewide in both surface and subsurface samples. The highest benzo(a)pyrene concentrations were in the vicinity of Buildings #7, #12, and #17. The highest concentration of benzo(a)pyrene was found on Lot 64 in Boring B-54's surface sample (13,000 ppb).

Benzo(b)fluoranthene detections that exceeded the PAL were prevalent in the southern portion of the Site compared to the northern portion. Most of the exceedances can be found on Lots 61, 63, 64, 65, and 67 in surface soil samples. Subsurface exceedances of benzo(b)fluoranthene were also detected but almost exclusively at the convergence point

of Lots 63, 65 with 66, which is located between Buildings #7, #12 and #17 (Figure 3-14) with a subsurface concentration of 2,800 ppb at Boring B-44. Most of dibenz(a,h)anthracene detections that exceed the PAL are located on Lots 63, 64, 65, 66, and 67. Indeno(1,2,3-c,d)pyrene detections that exceed the PAL are were almost entirely restricted to Lots 63, 64, and 67 with the largest detected concentration being found in the surface sample collected at B-54 on Lot 67 (7,300 ppb).

SVOC TICS: Numerous SVOC TICs (over 500) were detected in samples collected at the Site. Individual TICs greater than 100 milligrams per kilogram (mg/kg) were identified in samples collected from Borings B-3 and B-52. An estimated concentration of 220 mg/kg hexadecanoic acid was detected at Boring B-3 on Lot 1 and octadic-9-enoic acid at an estimated concentration of 140 mg/kg was detected at Boring B-52 on Lot 67.

Metals: Aluminum (19 samples), arsenic (133 samples), cadmium (24 samples), hexavalent chromium (101 samples), lead (114 samples), manganese (130 samples), mercury (116 samples), silver (12 samples) and zinc (23 samples) were the most common metals to exceed their specific site PALs. Eighteen of the 26 metals analyzed had exceedances of the PALs.

Copper and thallium were not detected in soil samples at concentrations above their PAL, and PALs do not exist for calcium, total chromium, ferrous iron, magnesium, potassium and sodium. Aluminum exceedances of the PAL were found on Lots 63, 64 and 66 in surface samples. The highest subsurface aluminum exceedances were found in samples collected from borings on Lot 60 at Boring B-20 (11,700,000 ppb) and Lot 57 at Borings B-9, B-10 and B-71 Figure 3-23.

Concentrations of arsenic were found spread through the northern and southern portions of the Site with the highest concentration being 56,800 ppb in a sample collected from Boring B-24. The highest concentrations of arsenic is found in and around Buildings #6 and #7 on Lots 61 and 63.

Cadmium exceedances were grouped around Building #7 on Lot 63 in both surface and subsurface soil samples. However, the highest concentration was found in Lot 70 (northern portion of Site) in the subsurface sample collected from Boring B-67 (41,800 ppb).

Hexavalent chromium exceedances of the PAL were found in both the northern and southern portions of the Site, and the vast majority of the samples that had an exceedance were found in the "surface samples" collected from borings when comparing to the results of the subsurface samples collected from the same boring location. The highest concentration of hexavalent chromium was found in Boring B-39 (surface sample) on Lot 65 (121,000 ppb), however, hexavalent chromium was not detected in the deep sample from that boring.

Lead was detected sitewide with PAL exceedances in both surface and subsurface soil samples with the higher concentrations being clustered around Buildings #6, #7, #16, and #17. Manganese also was detected sitewide at exceedances over the entire Site, with the higher concentrations found along the eastern portion of the southern lots bordering the Passaic River (Figure 3-20).

Mercury was detected in exceedances of the PAL sitewide, with the highest exceedance being found in the fill/debris pile sample collected from Boring B-60 (3,510,000 ppb) which is located on Lot 68. Silver's exceedances of the site PAL generally occurred on the southern portion of the Site in the surface samples collected from Lots 57 and 68 with a small cluster of surface soil exceedances also found near Building #19 (Lot 69) and the northwestern portion of Lot 70. Zinc exceedances of the PAL were mostly found within the footprint of former Building #5 and clustered around Building #7. Subsurface exceedances of zinc's PAL were found clustered around Building #6 and Building #7 (Figure 3-24.)

Cyanide: Only one boring had an exceedance of cyanide's PAL, Boring B-41, which is located on Lot 65. It had a surface sample concentration of 37,600 ppb.

PCB: PCB-1254 (11 samples) and PCB-1260 (11 samples) had exceedances of the site PALs. PCB-1254 exceedances were mostly concentrated on the southern portion of the Site in Lots 63, 64, and 65. PCB-1260 exceedances were almost entirely from surface samples collected in the northern portion of the Site and were found on Lots 58, 69, and 70.

3.5 SUPPLEMENTAL SURFACE SOIL SAMPLING

In accordance with the USEPA approved RI/FS Work Plan, supplemental surface soil sampling was conducted at specific areas of the Site related to the potential presence of dioxin/furans and pesticides/herbicides. Figure 3-2 displays the surface soil sample locations, and Table 3-5 provides a list of surface soil samples that were collected for dioxin/furan analysis and/or pesticide/herbicide analysis. Each of these surface soil samples was collected from the 0 to 6-inch depth interval. If samples were collected in paved areas, the 6-inch surface soil sample was collected immediately below the pavement and its subbase gravel. The supplemental surface soil sampling took place on September 28, 2017.

The dioxin/furan evaluation included the collection of nine grab surface soil samples. Seven surface soil samples (DF-1 through DF-7) were at the approximate locations shown on Figure 3-2. Two sample locations (DF-BLDG5 and DF-L66) were collected near Building #17 and former Building #5 locations.

The pesticide/herbicide evaluation included the collection of five grab surface soil samples. The pesticide/herbicide samples were collected along the railroad tracks that bound the western side of the property, at the former railroad spur in the northern portion of the Site, and along the northern fence line adjacent to Riverside Avenue in Lots 59 and 69 (Figure 3-2).

Supplemental surface soil samples were analyzed utilizing USEPA Method SOM02.4 and SW8081B (dieldrin only) for pesticides, USEPA Method SW8151 for herbicides, and USEPA Method 1613B for dioxin/furan. No pesticide/herbicide results exceeded PALs. The dioxin/furan results indicated that four of the nine surface soil samples exceeded the PAL for 2,3,7,8-TCDD. Figure 3-7 shows the location of these exceedances. A summary of the dioxin/furan and herbicide/pesticide sample results is provided in Table 3-6.

Field QC requirements for the supplemental surface soil samples that were collected during Phase 1 are summarized in the QAPP with the actual counts for QA/QC samples collected as follows:

- Field Duplicates: 1 Herbicide/Pesticide, 1 Dioxin/Furan
- MS/MSD: 1 Herbicide/Pesticide, 1 Dioxin/Furan
- Equipment Blanks: 1 Herbicide/Pesticide, 1 Dioxin/Furan

The hand auger was decontaminated in between each sample location and prior to the collection of equipment blank samples. Equipment blanks were collected by pouring laboratory-supplied deionized water through the hand auger that was used for collecting each of the dioxin/furan and herbicide/pesticide samples and collected in the appropriate sample bottle.

3.6 SOIL QA/QC RESULTS

Field Duplicates

The number of field duplicates collected and analyzed was in accordance with the QAPP. Field duplicates were reviewed during validation. Details on the field duplicate findings are provided in Appendix G. RPD was not calculated for compounds that were not detected in both samples.

Field duplicates for herbicides, pesticides, dioxin/furans, and PCBs were within acceptable project criteria. Select soil samples for silver, vanadium, antimony, barium, cadmium, and lead were qualified based upon field RPDs outside of the project criteria. RPD for other metals were within the project criteria.

Field duplicates RPD for VOCs, SVOCs, mercury, cyanide, and hexavalent chromium overall were within the project acceptable criteria. If parameters and samples were outside the project criteria, the associated data were qualified.

Equipment Blanks

An evaluation of equipment blanks results was performed during validation. Details on the equipment blank findings are provided in Appendix G. If the findings indicated contamination, the associated data was qualified.

3.7 SOIL DATA VALIDATION AND USABILITY

Validation of soil results was performed by C2N Associates (C2N) and Environmental Standards (ES) as follows:

- VOCs, SVOCs, mercury, hexavalent chromium, cyanide – ES
- PCBs, herbicides, pesticides, metals, dioxin/furans – C2N

Data qualifiers are presented in Tables 3-4A through 3-4D, Table 3-6, and validation reports are provided in Appendix G. Select parameters were analyzed by more than one method in accordance with the QAPP (i.e., SVOCs). Each method provides a result for these parameters. The reported results were selected based upon review of the data including concentrations with respect to calibration ranges, dilutions, and laboratory/validation qualifiers. TICs were not validated.

Elevated reporting limits for VOCs and SVOCs were frequent in soil samples due to the presence of various compounds that necessitated dilution prior to analyses. Complex sample matrix caused interferences affecting reporting limits. Overall, the sensitivity of the data is sufficient to meet Phase 1 objectives.

A review of sampling data collected during the completion of the investigation activities and contained in the laboratory analytical reports indicates that the laboratory analytical data are usable in support of decision-making at the Site. Data with elevated reporting limits were qualified with few data rejections. Woodard & Curran findings concur with the noted findings of C2N and ES.

Over 90 percent of the data is usable for its intended project objectives. Rejected data were not concentrated on one lot or area. Completeness objectives were met.

3.8 GEOTECHNICAL TESTING RESULTS

As described in the April 2015 Site Characterization Summary Report and previous NJDEP-required investigations at the Site, a continuous clay layer beneath the fill material that was described as an impermeable layer preventing vertical migration of contaminants was identified. Visual description of the material underlying the fill material during the Phase 1 soil boring program confirmed the clay-containing layer was widespread beneath the Site. During Phase 1, geotechnical samples were collected to assess the physical properties of the clay-containing layer present beneath the fill layer.

Three geotechnical samples were collected and analyzed according to the USEPA-approved Work Plan Modification Memo entitled Clay Layer Sampling and Testing Program, dated January 31, 2018. Geotechnical samples were collected from the soil borings for Monitoring Wells MW-103, MW-108, and MW-120 in February 2018 and submitted to Geotechnics, Inc. (Geotechnics) of East Pittsburgh, Pennsylvania for analysis. The three samples were collected from the south, central, and northern portion of the Site as follows:

- MW-103 boring location between 12 and 14 feet bgs.
- MW-108 boring location between 11 and 13 feet bgs.
- MW-120 boring location between 11 and 13 feet bgs.

The geotechnical report is provided in Appendix H with the findings summarized in the table below. Permeability testing was conducted on the portion of the core with the highest clay content based on Geotechnics' visual examination.

Sample ID	**USCS(1) Classification**	**Average Permeability (cm/s)(2)**
MW-103 (12-14)	SM, Silty Sand	$2.5x10^{-5}$
MW-108 (11-13)	CL, Sandy Lean Clay	$3.3x10^{-7}$
MW-120 (11-13)	ML, Sandy Silt	$1.1x10^{-5}$

(1) USCS – Unified Soil Classification System
(2) cm/s – Centimeter per second

The results of the geotechnical testing indicated that the permeability of in-place soil immediately beneath the fill layer has variable permeabilities. Soil stratigraphy deeper than 15 feet bgs was not investigated during Phase 1.

4. TEMPORARY WELL POINTS

A key aspect of the Phase 1 soil boring program was the selection, installation, sampling and analyses of TWPs. This information was used as groundwater quality screening data and in determining the locations of Phase 1 monitoring wells. Selection of the TWP locations were based on:

- Sitewide consideration rather than individual parcels
- Current and past operations
- Upgradient characterization

Cascade Drilling, a New Jersey-licensed driller out of New Brunswick, New Jersey, installed the TWPs as part of the soil sampling program. TWP installation and development SOPs are provided in the QAPP, and the TWP locations can be found on Figure 3-2.

4.1 TEMPORARY WELL POINT DRILLING AND INSTALLATION PROCESS

Each TWP is associated with a soil boring. Soil borings were installed and sampled as described in Section 2.1. At select locations at the conclusion of soil sampling activities, a TWP was installed adjacent to the soil sampling location. Initially, TWP installation was conducted using the standard size core barrel, 2.25-inch outside diameter (O.D.) with a 2.0-inch inside diameter (I.D.), following the procedures in SOP-22 TWP Installation. When the sand pack was added around the annulus of the one-inch polyvinyl chloride (PVC) screen and riser within the core barrel, the sand bridged against the core barrel wall and the PVC, causing the TWP to be pulled from the hole as the core barrel was retracted. Because of this, a field modification was put in place to ensure that the TWP would be set at the desired depth, and not pulled up from its target total depth. This was performed by retracting the probe barrel and steel casing from the hole and then adding sand into the open borehole annulus around the well.

Additional field modifications were provided by the on-site USEPA representative by requesting that the TWP installation use a larger 3-inch ID core barrel with the disposable knock-out point so that the sand could be placed around the annulus of the PVC screen and riser while still in the core barrel. The sand pack would then continue to be placed as the barrel was retracted. The table below provides a summary of the installation for each TWP with either a 2 inch or 3-inch core barrel, installation dates, and sampling dates. The table also provides a summary of the turbidity at the beginning of the TWP development process and at sampling.

TWP ID	ID Core Barrel Size (inches)	Date Installed	Remarks	Date Sampled	Initial Turbidity (NTU)	Sampling Turbidity (NTU)
B-7	3	10/16/2017	Well went dry during purging, allowed to recharge 24-hour wait	10/18/2017	40.7	160
B-9	3	10/17/2017	Sampled immediately following development	10/18/2017	>1,000	303
B-11	3	10/17/2017	Sampled immediately following development	10/18/2017	>1,000	354
B-13	3	10/11/2017	Sampled immediately following development	10/12/2017	>1,000	19.2
B-18	3	10/12/2017	Sampled immediately following development	10/13/2017	>1,000	17.5

TWP ID	ID Core Barrel Size (inches)	Date Installed	Remarks	Date Sampled	Initial Turbidity (NTU)	Sampling Turbidity (NTU)
B-20	3	10/18/2017	Sampled immediately following development	10/18/2017	>1,000	>1,000
B-28	3	10/24/2017	Sampled immediately following development	10/24/2017	>1,000	61.6
B-30	3	10/26/2017	Sampled immediately following development	10/26/2017	NA (brown translucent)	NA (translucent brown)
B-31	3	10/18/2017	Sampled immediately following development	10/19/2017	>1,000	52.7
B-32	3	10/4/2017	Min. 24-hour wait	10/5/2017	340	107
B-34	3	10/23/2017	Sampled immediately following development	10/24/2017	>1,000	46.5
B-38	3	10/10/2017	Sampled immediately following development	10/11/2017	>1,000	121
B-39	3	10/3/2017	Min. 24-hour wait	10/5/2017	352	>1,000
B-42	2	10/2/2017	Min. 24-hour wait	10/3/2017	>1,000	119
B-44	2	10/2/2017	Min. 24-hour wait	10/3/2017	>1,000	10.8
B-51	3	10/25/2017	Sampled immediately following development	10/26/2017	NA (clear)	NA (clear)
B-55	3	10/3/2017	Min. 24-hour wait	10/5/2017	>1,000	>1,000
B-57	3	10/3/2017	Min. 24-hour wait	10/5/2017	>1,000	105
B-59	3	10/3/2017	Min. 24-hour wait	10/5/2017	200	20.2
B-61	3	10/11/2017	Sampled immediately following development	10/11/2017	>1,000	49.1
B-63	3	10/11/2017	Sampled immediately following development	10/11/2017	513	25.8
B-67	3	10/16/2017	Sampled immediately following development	10/16/2017	>1,000	46.9
B-68	2	10/24/2017	Sampled immediately following development	10/25/2017	NA (Dark,* Turbid, gritty)	NA (clear)*
B-70	3	10/24/2017	Sampled immediately following development	10/25/2017	NA (Slightly* Turbid, semi clear)	NA (clear)*
B-75	3	10/24/2017	Sampled immediately following development	10/25/2017	NA *(Moderately Turbid, cloudy)	NA (clear)*

*Indicates that the turbidity meter was inoperable, and Nephelometric Turbidity Unit (NTU) readings were not obtained.

During TWP installation, select borings were not able to be completed at the RI/FS Work Plan locations due to the presence of underground utilities or refusal during drilling. Because of these conditions, TWP locations were changed in consultation with USEPA. The list below describe conditions encountered at the TWP locations that were changed:

- B-9 – Boring B-9 was designated as a soil boring location initially, but after refusal was encountered at Point B-71, Boring B-9 was converted into its replacement TWP.
- B-10 – At Boring B-10, a void space was encountered underneath of the concrete pavement that is located at this boring. Proposed TWP at Boring B-10 was shifted to adjacent soil boring location B-11.
- B-11 – Due to conditions encountered at Boring B-10, Boring B-11 was installed as a TWP. No soil sample was collected from Boring B-11 due to saturation of the soils below the concrete bulkhead void.
- B-20 – Boring B-20 was designated as a soil boring location initially but was converted to a TWP point after refusal was encountered at Boring B-72. Boring B-20 became the replacement TWP for Boring B-72.
- B-30 – Boring B-30 was an additional TWP location that was added by the USEPA
- B-50 – Boring B-50 was located within an AST courtyard on the southern side of Building #17. Within this courtyard, the reinforced concrete was too thick and had extensive rebar for the coring machine to penetrate. A total of three attempts was made to core the concrete with the deepest attempt reaching 12 inches. Boring B-50 was abandoned, and the TWP was shifted to adjacent Boring B-51.
- B-51 – Due to conditions encountered at Boring B-50, Boring B-51 was converted into a TWP installation point. USEPA gave verbal agreement over the phone on October 26, 2017.
- B-68 – Boring B-68 was designated as a soil boring location initially, but after refusal was encountered at TWP Boring B-73, Boring B-68 was converted into its replacement TWP location with approval from USEPA and Woodard & Curran personnel.
- B-71 – The TWP for Boring B-71 was unable to be installed at the Boring B-71 location. Refusal was encountered at approximately five feet below grade on the concrete bulkhead. One soil sample was collected from this location, however, the TWP was not installed but instead shifted to Boring B-9 where it was installed as a replacement TWP for Boring B-71.
- B-72 – Boring B-72 encountered refusal at approximately 5 feet bgs, therefore, the TWP was unable to be installed at this location and was placed in Boring B-20 as a replacement TWP for Boring B-72.
- B-73 – At TWP for the Boring B-73 location, a smaller cart Geoprobe® rig was used to attempt to advance the TWP due to access constraints to the interior of the building (Building #6). The smaller rig, however, could not penetrate further below the ground than 5 feet bgs at this location. The TWP was shifted to Boring B-68 which is located within the same building as Boring B-73. The cart rig was able to advance to the desired placement depth to put in a TWP at this location (Boring B-68). This was also done with agreement between the USEPA and Woodard & Curran personnel.

Three contingent TWPs were installed at Borings B-30, B-70, and B-75. TWPs were placed at Borings B-70 and B-75 based on elevated soil headspace PID readings. A TWP was placed at Boring B-30 due to elevated soil headspace PID readings and its inferred downgradient location from Borings B-75 and B-34. Contingent locations were agreed upon verbally by USEPA on October 26, 2017.

4.2 TWP SAMPLING

After the installation of TWP was completed, purging/development took place following SOP-22. Purging/development of the TWP was completed by using a peristaltic pump and Teflon-lined tubing. Each TWP was purged/developed until stabilization occurred. Stabilization was reached after three consecutive field parameter measurements were obtained

for pH, specific conductance, turbidity, temperature and oxidation reduction potential. Readings for these field parameters were collected after each TWP volume removal. Field parameters are considered stable if pH is within 0.10 units +/- after three consecutive readings, specific conductance and temperature readings are within 3 percent of three consecutive readings, turbidity is within 10 percent after three consecutive readings, and ORP is 10 units +/- after three consecutive readings. A grab groundwater sample was collected following stabilization using a peristaltic pump and/or bailer. Analytical bottleware was filled in the following order:

- VOCs,
- SVOCs,
- PCBs,
- Metals,
- Mercury, and
- Cyanide.

4.3 ANALYTICAL RESULTS

TWP samples were analyzed for VOCs, SVOCs, metals, mercury, cyanide, and PCBs by ChemTech Laboratories. Table 4-1 presents the TWP results which were used as screening level data for determining permanent groundwater monitoring well locations (Section 7.2). TWP results are not validated.

Seven VOCs and four SVOCs were identified above PALs. The most prevalent exceedances were for benzene, ethylbenzene, naphthalene, and 1,4-dioxane. The metal results indicated the concentrations of 13 metals above PALs with the most common exceedances being aluminum, arsenic, cyanide, iron, lead, manganese, and sodium. PCBs were not detected.

5. CONTAINER INVENTORY AND CONTAINERIZED WASTE

This task updated observed current conditions related to containers in vacant buildings. The inventory involved vacant Buildings #6, #7, #12, #15 and #15A, and #17. Building #15A is the pumphouse attached to Building #15. USTs are also part of container inventory. USEPA reportedly removed all containers from Buildings #7 and #12 in 2015. Building #15 ASTs were empty in 2015 based upon USEPA observations. There are no known uses of Buildings #7, #12, #15, and #15A since 2015.

5.1 CONTAINER INVENTORY

A container inventory was conducted during the week of November 27, 2017. As explained in Section 2.3, significant efforts were made to gain safe access to Buildings #12 and #15 to complete the container inventory. The access procedures described below were provided to the property owner (City of Newark) for comment prior to access. Building #17 owner representative provided a key to access this building.

Access was secured to the upper floors of Building #12 by use of a scissor lift due to the poor condition of the inner staircases and outdoor fire escape stairs. Access points were opened within the window frames of Building #12's north facing walls. The glass window panels were removed from Floors 2, 3, 4, and 5, and wooden framing was placed within the window frames to protect the entry personnel.

For Building #15, access was gained through the second-floor doorway that exited to an outer stairwell. Due to the poor condition, the outer stairwell at Building #15 was removed. A scissor manlift was then used to reach the second-floor doorway. From this doorway, there was a view inside Building #15. Several feet of water surrounded the ASTs. However, due to the amount of water that had pooled inside the building around the AST storage area, and the poor condition of the interior elevated walkway, it was deemed not safe to enter the building.

Building #6 was accessible, and Building #17 was secured requiring a key from the owner. Removal of plywood allowed access to Building #15A.

A second point of emphasis of the container inventory was to confirm the current condition of USTs that were sampled by USEPA during their 2011 work. The geophysical survey (Section 3.1) identified the presence of USTs next to Building #12. The GPR readings identified the assumed edges of the USTs. Upon completion of the survey, a UST field of 11 suspected USTs was identified on Lot 64 at approximately three to four feet below the surface grade, and an additional anomaly was identified on Lot 68 (Figure 3-1B). The Lot 68 anomaly was located and marked out in the field, and an exploratory excavation was conducted at this location.

Containers including drums, ASTs, USTs, and process tanks within any of the abandoned and/or vacant buildings or lots on Site were identified, and the information was used to develop a list of proposed samples to be collected. This list (Table 5-1) contains information on the identified containers' size, material, location, and label information (if any). The proposed container samples to be collected were presented in the USEPA-approved QAPP (Addendum 2).

5.2 CONTAINER SAMPLING

The following describes the container sampling that was conducted in accordance with QAPP Addendum 2. Samples were collected from containers, USTs, and Buildings #15/#15A as listed in Table 5-2. Test pits in the area of Boring B-34 and at a geophysical anomaly on Lot 68 were performed; however, no sampling was performed as described below.

- At the USEPA's request, a test pit was to be dug to the eastern edge of the UST field at/near boring location B-34. The proposed test pit was adjacent to the one UST which had been found to contain light non-aqueous phase liquid (LNAPL). Two attempts were made to dig the test pit; however, reinforced concrete was

encountered at each attempt approximately one foot below surface grade. Due to the concrete and proximity to an underground water line, no more attempts were made to install the test pit with concurrence by USEPA.

- On the southern portion of the Site on Lot 68, a small geophysical anomaly was identified as being present at approximately two feet below the asphalt cap. Excavation at the location of the anomaly took place on March 23, 2018. A six-foot square test pit was dug to a total depth of six feet. No object or anomaly source was found within this test pit. The pit was backfilled, and the asphalt cap was re-patched.

5.2.1 Interior Container Sampling

Three containers identified during the November 2017 container inventory were sampled during the week of March 19, 2018 as part of the container sampling event. One container was identified in each of Buildings #7, #12, and #17. The paragraph below describes the sampling method as well as material that was found in each of the containers. Each of the samples was sent to TestAmerica Laboratories (TestAmerica) for analysis.

Within Building #7, a white chalky talc-looking substance was collected from a hopper that was located between Floors 2 and 1. The hopper extended from the second floor down to the first, and the sample was collected from the second floor and top of the hopper. An extendable pole and disposable cup was used to extend to the white talc-looking substance, and a decontaminated digging bar was used to scrape chunks into the disposable cup for collection. The process was repeated until a sufficient sample was collected.

In Building #12, a 55-gallon drum containing a liquid was identified, and the sample was collected using a disposable ladle cup.

In Building #17, a five-gallon bucket labeled as a filler containing a solid material was sampled using a disposable cup.

5.2.2 UST Sampling

During the week of March 19, 2018, excavation of the identified Building #12 USTs occurred. Surface soil (0 to 1 foot below grade) was segregated to a separate stockpile, while deeper soils were placed on a separate plastic sheet to ensure the surface soil was placed back at the surface when back filling. The excavation of soil overlying the suspected UST locations began at the northern most tank. The purpose of the excavation was to obtain access to sampling ports to allow for the collection of samples from within the tanks if material or liquids were present and to take a depth of the tank to identify the outer dimensions of the tank and its contents.

As each tank was uncovered, it was observed that many of the UST bungs or access ports had not been resealed or were completely missing the cap for the bung opening. The ports/bungs were approximately two to three inches in diameter. The main access ports on each tank were 24 inches in diameter and were located centrally on each of the USTs with the exception being the tank where Sample UST-7 was collected. This tank had two slabs of concrete poured in the general location of where the main access port typically would have been located. Tank orientation and layout can be found on Figure 5-1, which notates the UST access portals where samples were collected. During the excavation process, the top portion of each tank was exposed to its edges. This was done to gather spatial information so that the dimensions of each tank could be determined. As the excavation proceeded, it became obvious that what was originally thought to be 11 separate tanks were six larger tanks approximately 30 feet long by eight feet wide. The concrete slabs over the USTs likely caused interference during the geophysical survey causing the overestimated number of tanks. The perimeter of the UST field, as identified during the geophysical survey, is accurate.

One sample point was selected from each of the tanks, with the exception of the UST located in the northwestern corner of the UST field. This UST was originally thought to be two separate tanks, and two samples were collected from different access ports to the UST (Samples UST-2 and UST-3). After sampling, further inspection through the UST access port revealed the inner tank cavity was much larger and was one UST.

As shown on Figure 5-1, seven samples were collected from six USTs and analyzed according to QAPP. Field observations indicated that the samples from five USTs did not contain liquids identifiable as a product or waste product and that groundwater and/or surface water infiltration may have occurred. One UST (UST-5) was found to contain an LNAPL layer approximately 0.9 foot thick. A bailer was used to collect an LNAPL sample from the UST-5. The remainder of the sample set for UST-5 was collected with the use of a peristatic pump below the LNAPL layer. The flow was reversed on the peristaltic pump as the disposable tubing attached to it was lowered through the LNAPL layer. This ensured that no LNAPL would be pulled back through the tubing during sampling. Once the sample collection line reached the appropriate sampling depth, flow was adjusted to draw liquid from the tank for the sample.

The Phase 1 findings above vary from previous UST information. USEPA identified and sampled nine USTs. A tenth UST was empty. The presence of LNAPL material was not noted in USEPA records.

5.2.3 Buildings #15 and #15A Sampling

A water sample was collected from Building #15 where water had pooled within the building. The liquid level within the building was not higher than the approximate exterior ground surface level. The sample from Building #15 was collected using a 2-inch Teflon© bailer. No non-aqueous phase liquid (NAPL) was observed when collecting the water sample from Building #15.

Water and apparent NAPL samples were also collected from inside the first floor of the Building #15A pump room. Water was found beneath a steel grated floor in this portion of the building. An apparent NAPL layer was identified beneath the pooled water and appeared to be approximately 0.5 foot to 0.65 foot thick and very viscose. The water sample from Building #15A was collected using a disposable dipper. The NAPL was collected using a disposable cup and extendable pole.

5.3 CONTAINER SAMPLING RESULTS

The results for samples collected from containers, USTs, and Buildings #15/#15A are listed in Table 5-3A through 5-3E and Table 5-4. LNAPL results are provided in Table 5-3D.

5.3.1 Interior Container Results

As discussed previously, the contents of three containers were sampled for waste characterization purposes. The analyses requested included toxicity characteristics leaching procedure (TCLP) analysis for all three samples; however, the sample from Building #7 was unable to be analyzed via TCLP methods due to the physical properties of the material when it was prepared for analysis. For this sample only (CW-7-1), total VOCs, SVOCs, and metals were run in lieu of the requested TCLP analysis.

TCLP results for the container samples obtained from Buildings #12 and #17 indicated VOCs and SVOCs were not detected. TCLP concentrations were detected for two metals in the Building #17 sample (barium at 0.028J milligrams per liter [mg/L] and chromium at 0.052 mg/L) and for one metal in the Building #12 sample (chromium at 0.021J mg/L). Low level detections of total cyanide were detected at estimated concentrations in the Buildings #12 and #17 samples (0.0025J to 0.0027J mg/L). PCBs were not detected in the three samples.

Sample CW-7-1 contained various low-level concentrations of total metals including aluminum, barium, calcium, chromium, copper, iron, lead, manganese, nickel, potassium, sodium, and zinc. VOCs and SVOCs were not detected.

None of the container samples collected were classified as hazardous waste.

5.3.2 UST Results

Measurements taken during the UST sampling program indicated these USTs are approximately 30 feet long with a diameter of 8 feet and capacity of approximately 10,000 gallons. Measurements taken from the top of the tank to the bottom of the tank suggest some solids exist in the tanks up to 1.45 feet thick at the UST-7 sample location.

Approximate liquid elevations in the USTs were in general agreement with groundwater elevations recorded at MW-106 and MW-108 during excavation work with the exception that UST-1 (west central tank) and UST-4 (north eastern tank) had lower water levels and UST-7 (east central tank) was nearly full.

Based on the liquid depth measurements from the top of the tanks and the approximate 8-foot diameter of the tanks, the following liquid volumes in the tanks were calculated:

Sample Location	Depth to LNAPL (feet)	Depth to Liquid (feet)	Approximate Volume (gallons)
UST-1	NA	4.62	4,500
UST-2/3	NA	3.93	7,200
UST-4	NA	6.6	1,300
UST-5	3.95	4.85	4,100 (water) 1,600 (LNAPL)
UST-6	NA	2.6	8,100
UST-7	NA	0.55	10,000

Seven liquid samples and one LNAPL sample were collected from the UST tank field. Table 5-3A through 5-3D provides a summary of the UST results.

VOCs detected in the water samples collected from the USTs included both chlorinated VOCs (*cis*-1,2-dichloroethene [DCE], 1,1-dichloroethane [DCA], vinyl chloride [VC]) and fuel-related VOCs (benzene, toluene, ethylbenzene, xylenes [BTEX], isopropyl benzene) with the highest VOC concentrations associated with xylene (up to 64 mg/L in sample UST-4). UST-4 sample was from the LNAPL UST.

SVOC results from the USTs indicated lower concentrations than VOCs with the two highest SVOC concentrations identified at Sample UST-7 (4-methylphenol, 1.0 mg/L) and Sample UST-6 (naphthalene, 3.2 micrograms per liter [µg/L]). Numerous SVOC TICs were reported as opposed to VOC TICs. The 23 metals analyzed were detected in at least one of the water samples. PCBs were not detected in the UST water samples.

TCLP VOC results for water samples indicated detected benzene concentrations in four of the USTS (0.036 to 0.087 mg/L) and detections of 2-butanone and VC in one of the USTs. TCLP SVOC results for water samples indicated detected 2-methylphenol concentrations in four of the USTs (0.022J to 0.11 mg/L) and 3&4-methylphenol concentrations in two of the USTs (0.15 and 0.51 mg/L). TCLP metals results indicated that barium and chromium were the only metals detected in the water samples and were reported as estimated values.

The LNAPL sample result indicated that C10-C28 accounted for approximately 83 percent of the sample. The C10-C28 result was 710,000 mg/kg of 860,000 mg/kg total extractable hydrocarbons.

5.3.3 Buildings #15 and #15A Results

VOC results for the water sample collected from Building #15 indicated a detection of acetone (33 µg/L). SVOC results indicated low level concentrations of 4-methylphenol, 2,4-dimethylphenol, and naphthalene. Nineteen of the 23 metals analyzed were detected. PCBs were not detected in the water sample.

VOC results for the water sample collected from Building #15A indicated detections of acetone (19 µg/L), toluene (0.75J µg/L), ethylbenzene (7.3 µg/L), and xylene (29 µg/L). Twelve SVOCs were detected with the highest concentration being 180 µg/L phenanthrene. This sample also contained over 25 TICs, most at higher concentrations than 180 µg/L, which likely caused an elevated reporting level in this sample. Twenty of the 23 metals analyzed were detected. PCBs were not detected in the water sample.

TCLP results for the water sample collected from Building #15A indicated VOCs and SVOCs were not detected. Estimated TCLP concentrations of several metals (barium, cadmium, chromium, cyanide, and lead) were reported.

The LNAPL sample results from Building #15A indicated that total extractable hydrocarbons (C8-C40) content was 150,000 mg/kg with C10–C28 accounting for 110,000 mg/kg of the total extractable hydrocarbons.

5.4 DATA VALIDATION AND USABILITY

Container sample results were validated by ES. Validation qualifiers have been added to Table 5-3A through 5-3E, Table 5-4, and validation reports are provided in Appendix G.

A review of the laboratory and validation reports indicates the container results are usable in support of decision making at the Site. Phase 1 completeness objectives were met.

6. SEWER SYSTEM EVALUATION, SAMPLING AND ANALYSIS

6.1 SEWER SYSTEM EVALUATION

The evaluation of the sewer system was accomplished through a combination of subsurface utility evaluation, maps that were provided by Passaic Valley Sewer Commission (PVSC), and manhole assessment. These activities resulted in the sewer system layout shown on Figure 6-1, which summarizes the locations that were part of the sewer evaluation and sampling process. The manhole descriptions can be found below.

Manhole/Vault/ Catch Basin ID	Description/Observations
Manhole 1	Manhole has a round, steel lid. Construction included a stone interior with steel opening, and a line was found running east/west toward river. The sewer lined up with the outfall identified previously along the berm and with Manhole 2. The manhole opening is approximately 2 feet in diameter with bottom width approximately 4 to 5 feet. The top of pipe was at a depth of approximately 3 feet bgs, and the bottom is approximately 7 feet bgs. The water inside was identified to be tidally influenced by the river. On historical maps, this is identified as Herbert Place CSO. Lot 65.
Manhole 2	Manhole was identified as open and covered by a wooden board. Construction included a stone interior with steel opening, and a line was found running east/west toward the river. The sewer lined up with the outfall identified previously along the berm and with Manhole 1. The manhole opening is approximately 2 feet in diameter with bottom width approximately 4 to 5 feet. The top of pipe was at a depth of approximately 3 feet bgs, and the bottom is approximately 7 feet bgs. The water inside was identified to be tidally influenced by the river. On historical maps, this is identified as Herbert Place CSO. Lot 63.
Manhole 3	Manhole is sealed with concrete to the surface. No observed pipes run through the manhole, but unidentified subsurface anomaly and gas line are near it. Lot 64.
Manhole 4	Concrete-walled manhole, approximately 4 feet deep, contains debris and is covered by wooden board. An opening was identified 2 feet bgs to the northeast which is suspected to connect to Manhole 5 to the north. This opening was blocked. A 6-inch diameter PVC pipe was found to the southwest with a cap approximately 2 feet bgs pointing in the direction of Building #12. When traced, the 6-inch line was found to run along Building #7 and under the debris pile near Building #17. Based upon PVSC records, this manhole is believed to be part of the sewer piping formerly used by the Lot 66/Building #17 owner in 1997. Building #17 is currently abandoned. Lot 63.
Manhole 5	The concrete-walled manhole was covered with plywood. There is liquid at the bottom. A pipe/opening was found, approximately 6-inch diameter with no distinct edge. The depth was approximately 2 feet bgs facing south, and the pipe may connect to Manhole 4. When attempts were made to trace the line, it was found that the pipe to the south was blocked and filled with dirt. There is the possibility of another pipe opening below the water table in the north wall, but this could not be confirmed. Lot 62.

Manhole/Vault/ Catch Basin ID	Description/Observations
Vault 6	The vault was found with plywood covering it. Inside, there were two shut-off valves connected to the water main. No visible piping was found, but the geophysical survey identified a water pipe running north/south and a subsurface anomaly running through the manhole in the east/west direction. Lot 64.
Vault 7	Vault was found to be sealed with concrete. A water line was identified by the geophysical survey that passes either through or near the vault running north/south. Lot 64.
Manhole 8	Manhole was identified with a round, steel top covering a metal vault approximately 4 feet by 4 feet. Steel "L" shaped bars were identified within vault (i.e., possible pipe hangers), though their purpose is unknown. Water and sediment were present within the base of the manhole, and to the south/southeast of the manhole, nine pipes were identified. Each pipe had a 4-inch diameter steel construction. Of the nine pipes identified, only one line (Line L) could be traced (others blocked). Line L travels out south/southeast wall toward Building #9. Manhole depth is approximately 6 feet. Lot 1.
Vault 9	Vault was found with a secure closure with square metal top. Approximately 1-foot bgs, electric lines within 1-inch piping were found running north/south. At a depth of 4 feet bgs at the base of manhole, there is a circular valve. No visible piping was attached to the circular valve. Lot 62.
Manhole 10	A round, steel manhole lid approximately 3-foot diameter covered this manhole. A sump pump system (pump, discharge piping and electrical wiring) was located in the center of the vault, and liquid was found in the bottom. This equipment does not appear to be in working condition. To the south, a 4-inch steel pipe was connected to a sump running south and an 8-inch pipe was observed to the right of the sump running south. To the west, there were five cut electric lines, each 1 to 2 inches in diameter. Manhole depth is approximately 8 feet. Lot 1.
Catch Basin 11	Steel stormwater grate. Approximately 2 feet in depth and filled with soil/debris. Soil and debris were removed to approximately 2 feet bgs (no floor in vault was encountered) and a 4-inch diameter pipe vent riser was exposed. Vent is of unknown origin and runs to the stick-up type water meters to the southwest of Building #10. Lot 57.
Vault 12	Concrete slabs cover this vault which contains a fire hydrant. Lot 60.
Vault 13	Vault top consisted of four metal plates, each approximately 3 feet x 1.25 feet in Lot 1 parking area. A fire hydrant was found on southern side, and on the northern side, there was a broken 4-inch pipe entering from the northeast direction. The top split into a "Y" shape, and water was pooled in the broken pipe. Material was located in the bottom of vault. On southwest corner, a 4-inch diameter steel pipe cut through at an angle approximately 1.5 to 2 feet bgs. Vault is concrete. Lot 1.
Vault 14	Vault lid is round and steel. Vault is concrete. A water main was found on the west side of manhole, attached to a 12-inch diameter pipe approximately 5 feet bgs running east/west. A 2-foot bgs 4-inch steel water service line was identified running east/southeast to west/northwest, and an electric line conduit of 1 inch in diameter was found on the west side of the vault. Lot 1.

Manhole/Vault/ Catch Basin ID	Description/Observations
Vault 15	Vault lid is a round and steel manhole approximately 3 feet diameter. A square concrete vault was located inside with a total depth of approximately 8 feet bgs. In east/northeast corner, there are two 4-inch steel pipes at the base of the manhole. Wet material was present at the base of the vault but there was little standing water. Based upon historical power distribution maps and observations, this vault is considered to have been part of an electrical distribution system With Vault 15 believed to have been connected to Vault 20. Lot 56.
Manhole 16	Manhole was identified to be a 24-inch diameter round steel cover. The brick-lined manhole was filled with suds with the bottom approximately 5 feet bgs. There is a flow trough in the base and water was flowing. The geophysical survey located a line running west toward Manhole 17 and a line running south/southeast toward Building #10. Lot 57.
Manhole 17	Manhole was identified as a 24-inch diameter round, steel lid with a wide base flow trough running east/west. The depth of the manhole is approximately 5 feet bgs. Another line was identified as a 6-inch diameter pipe approximately 1-foot bgs. The pipe was very degraded and running west before stopping at the manhole. This line was blocked and could not be traced. Suds were found within the water, flowing west toward Riverside Avenue. Lot 1.
Catch Basin 18	Two storm water inlets were identified with steel rectangular shaped grates approximately 2 feet deep. Pipes were identified running west beneath a concrete ramp but could not be further traced. Catch basins are filled with soil/debris. Lot 59.
Manhole 19	Manhole 19 is a brick manhole connected to Manholes 16 and 17 based upon the presence of suds. Suds were found within the water that were previously identified in Manholes 16 and 17. Manhole 19 is located on Riverside Avenue (off site).
Vault 20	Vault lid is a round and steel manhole approximately 3 feet in diameter. There are holes in the lid, and the vault is approximately 5 feet deep. Within the concrete vault, there were two lines headed east, each a 4-inch diameter steel pipe stacked on top of each other between 2 to 3 feet bgs. There were also five lines headed south, each having a 4-inch diameter steel pipe at a depth of approximately 1.5 to 2 feet bgs. Steel "L" shaped bars attached to interior walls were observed, and water and debris were in the bottom of the vault. There are no outlets in the bottom portion of the vault. Based upon historical power distribution maps and observations, this vault is considered to have been previously part of an electrical distribution system. Maps show electric lines going from Building #6 (powerhouse) to where Vault 20 is located. Lot 1.
Catch Basin 21	Catch basin was identified to be a steel storm water grate with a line running from the grate east toward the river. The catch basin drains to the river wall via 6-inch diameter PVC pipe. No water was observed but catch basin did contain soil/debris and has an estimated depth of 3 feet. Lot 70.

A finding of the work was there were not two separate sewer systems as noted in the SCSR. The active sanitary sewer system connected to the PVSC system conveys industrial and sanitary wastewater from the Site. Certain manholes/vaults were likely associated with this system. Manholes/vaults not associated with this system were related to utility lines possibly conveying steam, high pressure, electric, or other non-waste materials. As noted in the table above, there were no pipes in the vaults, only openings in the vault walls. There is evidence of pipe hangers on some

walls. Liquids in the vaults are likely from precipitation and were sampled as described below. No current tenants or owners at the Site utilize this second subsurface piping system.

6.2 SEWER SYSTEM SAMPLING AND ANALYSIS

The sewer sampling program is described in the USEPA-approved QAPP Addendum 1. Guidelines for making the determination of whether sewer water samples were collected was based on the conditions present at each sampling location in March 2018. Some sample locations were found to be "dry" or obstructed with foamy material. In general, at each sampled location, the manholes were accessed, depths determined, and underground piping orientation evaluated as part of the sampling process. A list of sewer samples collected is presented in Table 6-1.

- Manholes 8, 10, and 17 are related to the sewer system and had liquids present. Because Manholes 16 and 17 are connected to each other, the manhole with the best opportunity to collect a sample at the time of sampling was sampled (Manhole 17). Manhole 16 was not sampled due to a "foamy" substance being present within the manhole. The location of these sample points can be found on Figure 6-1.

Other observations:

- Vault 20 - Although this vault is not currently understood to be associated with the sewer system, it did contain liquids and was sampled.
- Catch Basins 4, 5, 11, 18a/18b, and 21 did not contain liquid at the time of sampling; therefore, no sampling conducted.
- Vault 15 did not contain liquid at the time of sampling; therefore, no sampling conducted.

Based on an estimated high tide elevation of approximately 3.1 feet above mean sea level, sample locations 8, 10, and 15 are projected to be below the high tide elevation.

Four sewer samples were collected during Phase 1:

- Sewer-Lot 1 - 8_031918,
- Sewer-Lot 1 - 10_032018,
- Sewer-Lot 1 – 20_032018, and
- Sewer-Lot 1 – 17_032018.

Sampling of each of these locations was conducted using a peristaltic pump and Teflon® lined tubing. New tubing was used for each sewer sampling location, and prior to the filling of the sample bottle ware, 500 mL of sample water was purged through the tubing into a purge container per USEPA field oversight request.

Sample containers were filled in a similar pattern as was requested by the USEPA for the groundwater sampling (Section 7.4). The order for the sample container filling was as follows: VOCs, SVOCs, PCBs, metals and cyanide. After collection, samples were immediately put on ice and sent to TestAmerica for analysis.

Table 6-2 provides a summary of the sewer results. The results were compared to PALs listed in the QAPP. Two VOCs (methylene chloride and TCE) and one SVOC, benzo(a)pyrene, were detected above the PAL in the sample from Manhole 8 (Sewer – Lot 1 through 8, 031918), with the highest reported VOC concentration of 32,000 µg/L methylene chloride. No other PAL exceedances were present in the four sewer samples collected. It is noted there are active operations at the Site which discharge wastewater to the sewer system including manholes sampled in Phase 1.

6.3 DATA VALIDATION AND USABILITY

Sewer sample results were validated by ES. Validation qualifiers have been added to Table 6-2, and validation reports are provided in Appendix G. TICs were qualitatively identified.

A review of the validated and laboratory reports indicates the sewer results are usable in support of decision making at the Site. Phase 1 completeness objectives were met.

7. GROUNDWATER ASSESSMENT

This section describes groundwater activities conducted during Phase 1 of the RI/FS. The groundwater activities consisted of the following activities:

- Existing Monitoring Well Assessment
- New Monitoring Well Installation and Development
- Monitoring Well Sampling and Analysis
- Sump Sampling and Analysis
- Monitoring Well Slug Testing and Tidal Evaluation

A description and the findings of these activities are described below.

7.1 EXISTING MONITORING WELL ASSESSMENT

Eight existing wells, identified within this report as E-1 through E-8, were assessed (Figure 3-2A and 3-2B). No other previous monitoring wells, installed by others, were identified as being present at the Site. Assessment of existing wells is documented on the USEPA Well Assessment Checklist (Appendix I). Well logs, construction details, and permits were provided by LSRPs or obtained through the NJDEP dataminer website. The permits provide well identification information including installation date, well depth, screen interval, coordinates, and other details, summarized in Table 7-1.

During the well assessment, the groundwater depth and total depth of each located well was gauged with an oil/water interface probe. The condition of each well was also observed and evaluated to determine if well repair or redevelopment is an option. Well depth data were compared with permit records to determine if siltation had occurred.

The wells were assessed in October 2017. Monitoring Wells E-1 through E-7 were determined to contain varying degrees of silt accumulation, and redevelopment of these wells was determined to be the plan of action for these wells prior to groundwater sampling. NAPL was not observed. Monitoring Well E-8 was found to have a damaged protective surface casing requiring repairs. The proposed plan of action for Monitoring Well E-8 was replacement of the well pad and protective casing followed by redevelopment. The rehabilitation of existing wells via repair/re-development was presented in the USEPA-approved QAPP Addendum 2, dated February 15, 2018.

Monitoring Well E-8 was repaired on February 4, 2018, and the eight existing wells were redeveloped along with the newly installed wells in February 2018. Monitoring wells were redeveloped according to the QAPP (Field SOP-6). The existing wells were determined to be in satisfactory condition and were sampled in Phase 1 (Section 7.4).

7.2 MONITORING WELL INSTALLATION AND DEVELOPMENT

Based on the soil and TWP results, new monitoring wells were installed to evaluate groundwater quality. The locations were jointly agreed upon between PPG and USEPA. On January 29, 2018, Eichelbergers Inc., a New Jersey-licensed driller from Mechanicsburg, Pennsylvania commenced groundwater monitoring well drilling, installation and development. Groundwater monitoring well installation and development SOPs can be found within the QAPP. As mentioned in the following sections, some locations were adjusted. Groundwater monitoring wells were installed to evaluate the shallow fill deposits that represent the shallow water bearing zone of the Site, with their well screens bridging the soil/water interface.

7.2.1 Monitoring Well Drilling and Installation Process

A total of 22 new monitoring wells were installed from January 29 through February 14, 2018. One well (MW-113) was proposed to be installed as a replacement for Monitoring Well E-8 if it was not able to be reconditioned and its surface completions fixed. E-8 was able to be reconditioned and had its surface completions fixed so MW-113 was not installed.

Each monitoring well was installed using a Geoprobe® unit that possessed the ability to conduct direct-push sampling and turn 4.25-inch internal diameter hollow-stem augers. Prior to the augering of each monitoring well location, a direct-push soil sample run was completed to one foot beyond the projected target depth. The direct-push soil samples were logged and corresponding boring logs were prepared for each location (Appendix D). A PID with a 10.2 EV lamp was used to monitor for organic vapors during the drilling process and to obtain head space readings at two-foot increments. After soil logging, air knife utility clearance was conducted to a depth of five feet at each boring location prior to initiating hollow-stem auger drilling methods. The air-knifed hole had a diameter greater than the maximum diameter of the hollow-stem auger.

Each monitoring well was constructed with 2-inch I.D., Schedule 40, PVC casing and ten feet of machine-cut well screen with 0.01-inch slotted openings. Screen length was altered from 10 foot to a shorter length for Monitoring Wells MW-121 and MW-10, respectively. For Monitoring Well MW-121, the screen was shortened to eight feet to reduce the sand packs exposure to a very fine-grained silty clay. At Monitoring Well MW-106, a concrete layer was encountered at approximately 11.10 feet bgs and could not be breached reducing the screen in MW-106 to 9.1 feet in length.

A two-inch I.D., threaded, PVC bottom plug and pressure cap was installed at the bottom and top of each monitoring well, respectively. A clean coarse filter-pack sand (#01) was placed adjacent to the well screen to a depth of approximately 0.3 foot above the top of the screen. A fine-grained choker sand (#00) was added on top of the coarse-grained sand at approximately 0.4-foot-thick as a buffer between the coarse-grained sand and the bentonite seal. Pure Gold© bentonite seal was placed to a minimum thickness of 1-foot thick up to ground surface. Monitoring wells were completed with flush-mount, steel protective casings, and set in two-foot diameter round concrete pad to protect the wells from damage and surface water infiltration. Wells that were located in concrete or asphalt had a two-foot by two-foot square concrete pad placed to protect the well from damage or surface water infiltration. Each well was locked using keyed-alike padlocks. Well installation procedures followed are consistent with NJDEP guidelines.

7.2.2 Monitoring Well Development Procedures

The monitoring wells were developed using a whale pump and surge/swab and/or over pumping techniques. Surge swab techniques were used on wells that did not contact or had minimal contact with the fine-grained silty clay or clayey silt layer. If the well contacted the previously named formations, over pumping was used instead of the surge/swab technique to minimize the drawing in of additional fine materials into the well screen and sand pack. When the surge/swab technique was utilized, it created agitation within the water column at the surge block which enhanced the removal of the fine sediments that were present within the sand pack. The water removed from the well was contained in 55-gallon drums which were placed on a drum storage pad on the southernmost portion of the Site (Section 3.2).

During the development process, the pH, specific conductance, temperature, ORP, and turbidity were periodically recorded. Monitoring well development was continued until a minimum of five well casing volumes had been removed from the monitoring well and had reached stable pH, specific conductance, turbidity, and temperature readings (i.e., plus or minus 10 percent) for three consecutive casing volumes. If the 10 well volumes were removed from the well and turbidity was increasing or not showing signs of decreasing toward the 50 NTU target value, then a decision was made whether or not to continue development. If turbidity values were decreasing toward the NTU mark, development continued. Well development logs are included in Appendix J.

The new monitoring wells were surveyed by DWS Professional Land Surveying (DWS). The horizontal position of each well was located with reference to the New Jersey State Plane Coordinate System, and the vertical elevations of the

top of protective casing, PVC riser, and ground surface were surveyed to the nearest 0.01 foot and referenced to mean sea level. During the well surveying activities, DWS also surveyed the elevations of the river gauges as well as the basement elevations of Buildings #7, #12, and #17.

7.2.3 Monitoring Well General Construction Information

Boring logs and well installation details for the new monitoring wells are included in Appendix D. Below is a table that summarizes the general well permit and construction information for each of the new and existing monitoring wells installed at the Site.

MW-ID	NJ Permit Number	TOC Elevation (ft MSL)	Northing	Easting	Screen Interval (ft bgs)	Screen Length (ft)
MW-101	E201800598	10.1584	703954.47	586249.03	2.2' - 12.2'	10
MW-102	E201800599	11.2419	703876.09	586324.28	2.2' - 12.2'	10
MW-103	E201800601	6.2773	703750.97	586367.01	2.3' - 12.3'	10
MW-104	E201800600	6.9272	703855.51	586449.64	2.10' - 12.10'	10
MW-105	E201800595	7.9429	704184.89	586343.21	2.0' - 12.0'	10
MW-106	E201800596	9.193	704106.97	586398.88	2.0' - 11.10'	9.1
MW-107	E201800591	9.0019	703960.83	586418.21	2.25' - 12.25'	10
MW-108	E201800592	8.321	704069.94	586468.87	2.20' - 12.20'	10
MW-109	E201800580	8.0695	704105.17	586523.51	1.98' - 11.98'	10
MW-110	E201800593	7.001	703930.98	586493.74	2.30' - 12.30'	10
MW-111	E201800594	6.4252	703998.63	586526.98	2.25' - 12.25'	10
MW-112	E201800581	7.526	704079.82	586587.42	2.30' - 12.30'	10
MW-114	E201800572	12.1403	704541.56	586568.41	2.25' - 12.25'	10
MW-115	E201800573	8.962	704606.48	586668.32	2.15' - 12.15'	10
MW-116	E201800570	8.6467	704521.67	586710.36	2.18' - 12.18'	10
MW-117	E201800579	6.0528	704350.82	586713.59	2.35' - 12.35'	10
MW-118	E201800571	5.5481	704459.38	586786.89	2.07' - 12.07'	10
MW-119	E201800607	7.1538	704582.53	586848.69	2.5' - 12.5'	10
MW-120	E201800603	8.6142	704731.1	586854.5	2.27' - 12.27'	10
MW-121	E201800604	6.8412	704664.17	586889.18	2.03' - 10.03'	8

MW-ID	NJ Permit Number	TOC Elevation (ft MSL)	Northing	Easting	Screen Interval (ft bgs)	Screen Length (ft)
MW-122	E201800605	8.1402	704766.73	586788.89	2.25' - 12.25'	10
MW-123	E201800597	9.1462	703815.3	586242.99	1.96' - 11.96'	10
Existing Riverside Industrial Park Monitoring Wells						
E-1	2600087215	9.6126	703863.9	586264.58	4.5' - 14.5'	10
E-2	2600087216	6.2172	703803.06	586423.65	2.5' - 12.5'	10
E-3	2600087217	8.2000	704151.06	586434.11	2' - 12'	10
E-4	2600087218	7.6376	704229.93	586571.98	2.5' - 12.5'	10
E-5	E201310824	9.2581	704198.76	586393.86	2' - 12'	10
E-6	E201310826	9.1941	704254.7	586419.46	2' - 12'	10
E-7	E201310827	9.2731	704273.92	586421.52	2' - 17'	15
E-8	E201207838	5.7869	704226.57	586642.26	5' - 15'	10

7.3 GROUNDWATER GAUGING AND FLOW

Three rounds of groundwater and surface water gauging events were completed during each groundwater sampling event. A gauging event consisted of measuring the depth to water in each newly installed well, existing monitoring wells, and at the three river gauging points along the bulkhead wall. The three gauging events during each groundwater sampling round consisted of the following:

- An initial round of gauging prior to sampling,
- A gauging event conducted within two hours of peak low-tide, and
- A gauging event conducted within two hours of peak high-tide.

An electronic oil/water interface probe was utilized for evaluating for the presence of potential NAPL during the first groundwater monitoring event. No measurable thickness of NAPL was identified during any gauging event or groundwater sampling. The groundwater and river surface water elevations obtained during the low tide and high tide gauging events were used to develop groundwater contour maps for evaluating groundwater flow direction changes associated with tidal fluctuations at the Site. Table 7.2 provides a summary of the gauging data and calculated elevations for the tidal targeted gauging events. Figures 7.1 through 7.4 are the groundwater contour maps developed from the Table 7.2 data.

The four groundwater contour maps identify similar flow patterns across the Site with groundwater flow maps similar to surface water runoff maps (Section 9). Groundwater in the area of Buildings #1, #6, #7, #10, #12, #16, #17, and #19 flows toward the river to the east. A groundwater mound is present in the area of the UST field (Lot 64) and north of Building #16 (Lot 70). Groundwater in the area of Buildings #2, #3, #4, and #9 flows to the north toward the location of Monitoring Well MW-114, where a local groundwater depression is present during both low and high tides. The relatively flat groundwater gradient at this location (between E-6/E-7 and MW-114) may be related to the active sump

pump present in the basement of Building #2. Groundwater in the vicinity of Buildings #13, #14, and #15 flows to the west-northwest toward Riverside Avenue. The groundwater mound evident in the northern portion of the Site, north of Building #16 on Lot 70, was further evaluated as described below.

Groundwater elevation measurements indicate the northern groundwater mound is present during both high and low tides. An active water line is nearby that may have some influence. Coarser fill materials appear to be present within the mounded area with shallower fine-grained material located adjacent to the river to the east of the mound area. Four borings/monitoring wells are located adjacent to the river on the east side of the groundwater mound including the following from south to north: B-65, MW-119, MW-121, and B-63. A review of the logs for these borings indicates that a shallow silty clay to sandy clay unit is present starting at a depth of approximately 5.5 to 7.0 feet bgs. The log for a boring located at the approximate center of the groundwater mound (B-64) indicates gravelly silt, coarse sand, and gravel at this interval with the first indication of a deeper silty clay unit at approximately 11 feet bgs. Although complete borehole logging was limited due to less than optimum sample recoveries, it is believed that the lower permeable fill materials located to the east of the mound may be restricting groundwater flow toward and from the river during tidal fluctuations. No discernable bulkhead wall is present in this area. This area was one of the last areas to be backfilled at the Site as part of property development. Further discussion on groundwater flow within the fill unit is provided in Section 7.8.

7.4 GROUNDWATER SAMPLING AND ANALYSIS

Two rounds of groundwater sampling were conducted as part of the Phase 1. The first event took place over a two-week period that started on March 6, 2018, and the second two-week event began on June 4, 2018. The first groundwater sampling event was approximately one month after the newly installed groundwater monitoring wells were developed.

During both the March and June 2018 groundwater sampling event, monitoring wells were purged and sampled in accordance with the USEPA-approved SOP-9 along with the following additional SOPs: SOP-10, SOP-11, SOP-12, SOP-14, SOP-15, and SOP-16. Each monitoring well was low-flow purged and sampled using portable, stainless steel QED® bladder pump attached to dedicated Teflon®-lined polyethylene tubing. Monitoring wells were purged at a rate between 100 and 500 milliliters per minute (depending on recharge rate of the well), and the water generated during low-flow purging and sampling activities was contained in drums on the Site (Section 3.2). Each monitoring well was purged until stabilization occurred. Stabilization was reached after three consecutive field parameter measurements were obtained for pH, specific conductance, turbidity, temperature and ORP. Readings for these field parameters were collected after every five minutes. Field parameters were considered stable if pH is within 0.10 units +/- after three consecutive readings, specific conductance and temperature readings are within three percent over three consecutive readings, turbidity was within 10 percent after three consecutive readings, and ORP is 10 units +/- after three consecutive readings. A summary of field parameters measured during the sampling events is provided in Table 7-3. Appropriate QA samples including trip blanks, duplicates, MS/MSD as well as an equipment rinse blank, were also collected and analyzed. Samples were immediately placed into coolers with ice and taken to TestAmerica by courier service.

Groundwater samples were collected, and containers filled in the following order:

- VOC 8260C low level,
- VOC 8260C,
- SVOC SOMO2.4 SIM,
- PAHs SOMO2.4 SIM,
- 1,4-Dioxane USEPA 522,

- PCBs SW-846 8082A low level,
- Metals ISMO2.4 TCP-MS,
- Mercury ISMO2.4 ICP-MS,
- CrVI SW-846 7196A, and
- Cyanide SW-846 9012B.

When the bottles were filled during sample collection, one-third of each bottle would be filled for each method listed before progressing to the next analyte with the exception of the VOC samples. These samples had a complete voa vial filled alternating between methods (i.e., one vial for VOC 8260C low level was completely filled and then a voa vial for VOC 8260C was filled and then the next VOC8260C low level was filled until all VOC vials for each method were filled). After completing the filling of the VOC bottleware, one-third of each of the SVOC bottles was filled before moving to the PAH bottles to fill them a third and so on and so forth until all bottles were a third full. Then the second third would start with the SVOC bottles and continue on through the analytes as previously described until all bottles were full.

The complete sampling list of groundwater samples is provided in Table 7-4. Phase 1 groundwater samples were then validated as summarized in Section 7.6.

7.5 GROUNDWATER RESULTS

Groundwater samples collected during both the March 2018 and June 2018 sampling events were analyzed by various TestAmerica laboratories that can be found within QAPP Addendum 3. The paragraphs below summarize the findings of both groundwater sampling events. The analytical results are in Tables 7-5A through 7-5D. Figures 7-5 through 7-24 illustrate where PAL exceedances occurred at three or more wells during either of the sampling events. Field parameters are summarized in Table 7-3.

7.5.1 March 2018

The groundwater sampling results indicated that PALs were exceeded for the following 13 VOCs, 9 SVOCs, 12 metals, and also PCB-1260. A summary of the most prevalent PAL exceedances is provided below.

VOCs

- Acetone
- Benzene
- Carbon tetrachloride
- Chloroform
- Ethylbenzene
- Methylene Chloride
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethene
- 1,1,2-Trichloroethane
- Trichloroethene
- Vinyl chloride
- Xylene (m&p- and o-)

SVOCs

- 1,4-Dioxane
- 1,1-Biphenyl
- Bis(2-ethylhexyl)phthalate
- 4-Chloroaniline
- 4-Methylphenol
- Naphthalene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Pentachlorophenol

Metals

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cobalt
- Iron
- Lead
- Manganese
- Selenium
- Sodium
- Cyanide

VOC: Acetone exceeded the site PAL at Monitoring Well MW-118 which is located in the vicinity of a known previous spill in 1988 and MW-122 which is located in the northern most corner of the property on Lot 69. The highest concentration was at MW-118 which indicated the presence of acetone at 71,000 ppb.

Benzene was the most prevalent VOC detected above the PAL, detected in 9 of 30 wells sampled during the March 2018 sampling event. Concentrations of benzene that exceeded the PAL were detected almost exclusively on Lot 63 and Lot 64, apart from MW-118 which is located on Lot 57. Concentrations of benzene were found up to 89 ppb which was at MW-106 adjacent to the UST field.

Ethylbenzene was detected at concentrations that exceeded the site PAL at 5 of the 30 wells located on Site with the largest exceedance of 880 ppb at MW-106. Three wells were located to the north of Buildings #12 and #7 (MW-106 being one of the wells), and the remaining two wells could be found on Lot 58.

TCE was detected at three monitoring well locations that exceeded the site PAL. These wells were located on Lots 58, 63, and 64, with the highest concentration of TCE found at MW-106 at 35 ppb.

VC was detected at concentrations that exceeded the site PAL at 7 of the 30 monitoring wells sampled during the March 2018 event. Detected VC concentrations were low, all below 1 ppb, but identified to the north of Buildings #12 and #7, in the PCE spill area of Lot 68, at the former ROLOC AST pad, and at the former tank building on Lot 58.

m,p-Xylene was detected above its PAL within four of the sampled monitoring wells on Site. The highest concentration of xylene was found within the UST area in Monitoring Well MW-106 (4,000 ppb). The other two highest m,p-xylene concentrations that exceeded the site PAL could be found in MW-114 and MW-115 located on Lot 58. The PAL for o-xylene was also exceeded at MW-106, MW-114, and MW-115.

1,1,2,2-TCA was detected above the PAL in 3 of the 30 monitoring wells sampled during the March 2018 event. Two of the wells, E-1 and MW-123, are located within the former PCE spill area, and the third well, E-8, is located between Buildings #1, #6, and #9. The highest 1,1,2,2-TCA concentration was 0.43 ppb which was located in E-8.

VOC TICS: During the March 2018 sampling event, over 40 VOC TICs were detected during analysis of the groundwater samples. The highest total TIC concentrations were found in MW-118 having an estimated ethanol concentration of 120,000 ppb and an estimated methyl ester acetic acid concentration of 78,000 ppb. Acetonitrile or acrolein were not detected in VOC TICs.

SVOC: 1,4-Dioxane was the most prevalent SVOC detected above the PAL, detected in 16 of 30 wells sampled during the March 2018 sampling event. The highest recorded concentration of 1,4-dioxane during the March 2018 sampling event was 16 ppb located at MW-106. 1,4-Dioxane was detected in six wells within the PCE spill area on Lot 68 and downgradient of the spill, five wells in the UST field area and downgradient, and three wells on Lots 57, 60, and 70.

Naphthalene was detected above the PAL in nine monitoring wells on Site, with the highest detection being found within MW-115 (89 ppb) which is adjacent to Building #15. Wells in the vicinity of the UST field and downgradient accounted for most of the naphthalene concentrations above the PAL. Benzo(a)anthracene and benzo(a)pyrene were detected above the PAL in five samples (MW-102 through MW-104, MW-108, and E-2). Four of the five wells are located in areas surrounding Building #17 with the highest concentration present at E-2 (0.088 and 0.13 ppb, respectively). Benzo(a)anthracene also exceeded its PAL at MW-116.

SVOC TICS: During the March 2018 sampling event, over 140 SVOC TICs were detected during groundwater sample analysis, 10 reported as unknown. The highest estimated TIC concentration was for 3-hydroxy- (unknown) butanoic acid, estimated at 7,200 ppb at MW-118. One TIC, 2-methoxy-2-methyl- (unknown butane) was detected at an estimated concentration in 24 of the 30 wells sampled.

Metals: Arsenic, iron, manganese, and sodium were the most prevalent metals detected above their respective PALs during the March 2018 event. Thirty arsenic samples, 28 iron samples, 29 manganese samples, and 22 sodium samples exceeded their PALs. The highest concentration of arsenic was detected at MW-106 at 38.6 ppb.

Lead was also detected above the PAL within 13 wells sampled, with the highest detected concentration being 568 ppb in Monitoring Well MW-118 which is located on Lot 57. Mercury and hexavalent chromium were not detected above their respective PALs; however, the reporting limits for hexavalent chromium were above the PAL.

Cyanide: Cyanide was detected above the PAL within 18 of the 30 monitoring wells sampled with the highest concentration being found within Monitoring Well MW-111 at 17.8 ppb.

PCB: Concentrations of PCB-1260 that exceeded the site PAL were identified in three monitoring wells sampled during the March 2018 event. The wells are MW-118, MW-119, and MW-121 with the highest concentration being found in MW-119 at 0.018 ppb. These wells are located on Lots 57, 69 and 70.

Field Duplicates: Two duplicate samples were collected during the March 2018 event, one each at Monitoring Wells MW-109 and E-6. A comparison of the primary results with the duplicate results indicates similar results.

7.5.2 June 2018

The groundwater sampling results indicated that PALs were exceeded for the following 13 VOCs, 7 SVOCs, 10 metals, and also PCB-1260. A description of the most prevalent PAL exceedances is provided below.

VOCs

- Acetone
- Benzene
- 1,2-Dibromo-3-Chloropropane
- Chloroform
- Ethylbenzene
- 1,4-Dichlorobenzene
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethene
- 1,1,2-Trichloroethane
- Trichloroethene
- Vinyl chloride
- Xylene (m&p- and o-)

SVOCs

- 1,4-Dioxane
- 1,1-Biphenyl
- 4-Methylphenol
- Benzo(a)anthracene
- Benzo(a)pyrene
- Naphthalene
- Benzo(b)fluoranthene

Metals

- Aluminum
- Arsenic
- Barium
- Chromium VI
- Iron
- Lead
- Manganese
- Selenium
- Sodium
- Cyanide

VOC: Acetone exceeded the site PAL at Monitoring Well MW-118 which is located in the vicinity of a previous spill at Lot 57. The concentration of acetone at MW-118 decreased to 51,000 ppb since the March 2018 sampling event.

Benzene was the most prevalent VOC detected above the PAL, detected in 8 of 30 wells sampled during the June 2018 sampling event compared to nine wells during the March 2018 event. Concentrations of benzene that exceeded the PAL were detected almost exclusively on Lot 63 and Lot 64, apart from MW-115 which is located on Lot 58. Concentrations of benzene were found up to 82 ppb which was at MW-106 adjacent to the UST field, similar to the March 2018 event.

Ethylbenzene was detected at concentrations that exceeded the site PAL at 6 of the 30 wells located on Site with the largest exceedance of 500 ppb at MW-106. Three wells were located in the area of Buildings #12 and #7 (MW-106 being one of the wells), one was adjacent to Building #17, and the remaining two wells could be found on Lot 58.

TCE was detected at two monitoring well locations that exceeded the site PAL, these wells were located on Lots 63 and 64, with the highest concentration of TCE found at MW-106 of 11 ppb. VC was detected at concentrations that exceeded the site PAL at 6 of the 30 monitoring wells sampled during the June 2018 event. Detected VC concentrations were low, all below 1 ppb, except MW-106 (1.1 ppb).

m,p-Xylene was detected above its PAL within three of the sampled monitoring wells on Site. The highest concentration of m,p-xylene was found within the UST area in Monitoring Well MW-106 (1,900 ppb). The other two m,p-xylene concentrations that exceeded the site PAL could be found in MW-107 and MW-115.

1,1,2,2-TCA was detected above the PAL in 3 of the 30 wells sampled during the June 2018 event. One of the wells, E-1, is located within the former PCE spill area, one is located adjacent to Building #1 (E-8, former Roloc AST pad), and one adjacent to Building #7 (MW-107). The highest 1,1,2,2-TCA concentration was 0.56 ppb which was located in E-1.

VOC TICS: During the June 2018 sampling event, over 30 VOC TICs were detected during analysis of the groundwater samples. The highest total TIC concentration was found in MW-118. The highest estimated TIC concentrations at Monitoring Well MW-118 (Lot 57) were for isopropyl alcohol (1,000,000 ppb), ethanol (210,000 ppb), and acetic acid (110,000 ppb).

SVOC: 1,4-Dioxane was the most prevalent SVOC detected above the PAL, detected in 16 of 30 wells sampled during the June 2018 sampling event. The highest recorded concentration of 1,4-dioxane was 20 ppb located at MW-117. 1,4-Dioxane was detected in six wells within the PCE spill area on Lot 68 and downgradient of the spill, five wells in the UST field area and downgradient, and three wells on Lots 57, 60, and 70.

Naphthalene was detected above the PAL in eight monitoring wells on Site, with the highest detection being found within MW-106 (74 ppb) which is adjacent to UST field area. Wells in the vicinity of the UST field and downgradient accounted for most of the naphthalene concentrations above the PAL in addition to Lot 58 wells. Benzo(a)anthracene was detected above the PAL in four samples including MW-104, MW-116, MW-118 and MW-119, with the highest concentration being 0.3 ppb at MW-118.

SVOC TICS: During the June 2018 sampling event, over 125 SVOC TICs were detected during groundwater sample analysis, 10 reported as unknown. 2,3-Dimethyl benzenamine was the highest estimated TIC at 14,000 ppb at MW-106. One TIC, 2-methoxy-2-methyl-butane was detected at an estimated concentration in 29 of the 30 wells sampled.

Metals: Arsenic, iron, manganese, and sodium were the most prevalent metals detected above their respective PALs during the June 2018 event. Thirty arsenic samples, 29 iron samples, 28 manganese samples, and 25 sodium samples exceeded their PALs. The highest concentration of arsenic was detected at MW-106 of 28 ppb. Lead was also detected above the PAL in 15 wells sampled, with the highest detected concentration being 39.2 ppb in Monitoring Well MW-107 (Lot 63). Mercury was not detected above the PAL, and hexavalent chromium was detected above the PAL at one location (MW-107, 7.8 ppb).

Cyanide: Cyanide was detected above the PAL within 11 of the 30 monitoring wells sampled with the highest concentration being found within Monitoring Well MW-108 at 15.6 ppb.

PCB: One location exceeded the PAL for PCB-1260 during the June 2018 event. The Monitoring Well MW-118 concentration of PCB-1260 was 0.024 ppb.

Field Duplicates: Two duplicate samples were collected during the June 2018 event, one each at Monitoring Wells MW-108 and E-2. A comparison of the primary results with the duplicate results indicates similar results.

7.5.3 Groundwater QA/QC Results

Field Duplicates

The number of groundwater field duplicates collected and analyzed was in accordance with the QAPP. Field duplicate results were reviewed during validation. Details on the field duplicate findings are in Appendix G. RPD were not calculated for compounds that were not detected in both samples.

March 2018 samples: The field duplicate results were within the QAPP acceptance limits except for anthracene. Anthracene results were qualified.

June 2018 samples: The field duplicate results were within the QAPP acceptance limits.

Equipment Blank

An evaluation of equipment blank results was performed during validation. Details on the equipment blank findings are located in Appendix G. The appropriate data were qualified within the results tables.

7.5.4 Comparison of March and June 2018 Groundwater Results

The groundwater sampling results from these two events are fairly consistent with each other; although in general, lower concentrations were identified during the June 2018 sampling event in comparison to the March 2018 sampling event. The slight variability may be a result of precipitation events (snow during March 2018 event) and/or tidal effects. Two more SVOCs and metals were detected during the March 2018 event than the June 2018 event. The following parameters exceeded their respective PALs during both sampling events:

VOCs

- Acetone
- Benzene
- Chloroform
- Ethylbenzene
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethene
- 1,1,2-Trichloroethane
- Trichloroethene
- Vinyl chloride
- Xylene (m&p- and o-)

SVOCs

- 1,4-Dioxane
- 1,1-Biphenyl
- 4-Methylphenol
- Benzo(a)anthracene
- Benzo(a)pyrene
- Naphthalene

Metals

- Aluminum
- Arsenic
- Barium
- Iron
- Lead
- Manganese
- Selenium
- Sodium
- Cyanide

PCBs

- PCB-1260

VOCs: Groundwater results were generally consistent between the March and June 2018 events. Carbon tetrachloride, 1,4-dichlorobenzene, 1,2-dibromo-3-chloropropane and methylene chloride were the only varying

exceedances of the PALs detected for VOCs between both events. Acetone detections within MW-122 during the March 2018 event were not replicated during the June 2018 and were non-detect. Acetone concentrations within MW-118 during the March event also decreased between March and June 2018. Benzene detections were the most prevalent VOC to exceed the PAL during both events.

SVOCs: Groundwater results were consistent between both the March and June 2018 events. Bis(2-etheylhexyl)phthalate, 4-chloroaniline, pentachlorophenol, and benzo(b)fluoranthene were the SVOCs detections that varied in exceedances of the PAL between the two events, with the June 2018 event having less SVOC detections to exceed the PAL. 1,4-Dioxane was the most prevalent SVOC detected during both events and consistently was detected in monitoring wells tested within the former PCE spill area and downgradient.

Metals: Arsenic, lead, iron, manganese and sodium were consistently the most prevalent detections during both sampling events. Antimony, beryllium, cobalt and hexavalent chromium were four parameters that did not exceed their respective PALs during both sampling events. Hexavalent chromium and mercury were not detected above their respective PALs during the March 2018 event, however, during the June 2018 event hexavalent chromium was detected over its PAL in MW-107.

PCB: Three wells were identified to exceed the PAL for PCBs during the March 2018 event (MW-118, MW-119, and MW-120). However, only MW-118 had a detection of PCB-1260 above the site PAL during the June 2018 event.

7.6 DATA VALIDATION AND USABILITY

March 2018 groundwater results were validated by C2N. June 2018 groundwater results were validated by ES. Data qualifiers have been added to Tables 7-5A through 7-5D and validation reports are in Appendix G. Select parameters were analyzed by more than one method in accordance with the QAPP (i.e., SVOCs). Each method provides a result for these parameters. The reported result was selected based upon review of the data including concentration with respect to calibration ranges, laboratory and validation qualifiers. TICs were qualitatively identified and not validated.

Data usability evaluation was performed on the March and June 2018 groundwater samples and results to determine whether the precision, accuracy, representativeness, comparability, completeness, and sensitivity of the data were sufficient for the intended purpose of the data (Appendix G).

Elevated reporting limits for VOCs and SVOCs were common in groundwater due to the presence of various compounds at concentrations that often necessitated sample dilution prior to analysis. The laboratory also noted a difficult sample matrix on several occasions. As a whole, the sensitivity of the data collected is sufficient to determine the nature and extent of the discharges, the distribution of impacts, and the need for remedial action.

A review of sampling data collected during the completion of the investigation activities and contained in the laboratory analytical reports indicates that the laboratory analytical data are usable in support of decision-making at the Site. Data with elevated reporting limits were qualified with few data rejections. Woodard & Curran findings concur with the noted findings of C2N and ES.

Over 90 percent of the data is usable for its intended project objectives. Rejected data were not concentrated on one lot or area. Completeness objectives were met.

7.7 SUMP SAMPLING AND ANALYSIS

During site reconnaissance activities, several sumps containing water were identified in the basements of Buildings #2 and #17, along with former Building #4 floor. Building #2 sump contained an operating pump which pumped water to the sewer pipe. The pump activates with a central control float. Building #3 sump is in the floor of former Building #3 and likely contains surface precipitation as it is exposed to weather. Building #17 sumps are located in the basement. Their use is unknown but may be tied into a central floor drain that extends west to east across the basement. No

sumps were observed in Buildings #7, #12, or #15. The liquid in sumps at Buildings #4 and #17 are subject to accumulating precipitation and the sump at Building #2 is suspected to be comprised of groundwater.

Grab water samples were collected from the sump in Buildings #2 and #4 during the March 2018 groundwater sampling event and from the Building #17 sumps during the June 2018 sampling event. Building #17 sumps were not sampled during the March 2018 sampling event due to standing water in the basement.

Each of the four identified sumps were analyzed using the same methods and parameter list that was used for groundwater samples. A list of sump samples collected are presented in Table 7-4. Tables 7-6A through D provides a summary of the sump sample results. Data validation and usability of the sump sample results was completed in concert with the groundwater sample data.

7.8 AQUIFER CHARACTERIZATION TESTING

Aquifer characteristic testing was performed in Phase 1 of this task and included the following:

- In-situ hydraulic conductivity tests (slug tests) were conducted at select shallow monitoring wells to determine hydraulic conductivities in the fill unit. At each selected well, two slug tests were performed; each test consisted of a slug-in (falling head) and slug-out (rising head). Aquifer testing was completed according to the field SOP in the USEPA approved QAPP.
- A tidal evaluation was conducted during a full tidal cycle using data loggers. Each logger that was deployed collected water level measurements and conductivity readings from select monitoring wells and surface water elevations from the river gauging monitoring points.

The evaluation of slug test data and information from the tidal investigation were collectively reviewed to determine gradients and flow paths. Details of both evaluations are provided below. A groundwater flow model for groundwater within the fill unit is not being considered for use at this time because of the limited extent of the fill unit and its man-made origin. The fill unit likely extends off-site to the south and north along the Passaic River.

7.8.1 Slug Testing

Slug tests were performed in six wells at the Site. Slug tests may be performed under both rising head and falling head conditions. Falling head tests are performed by introducing a slug of known size into the water column in a well. When the slug is introduced, it displaces the water upward in the well and as the water "falls" back to its original position in the well, the position of the water is measured from a fixed point (transducer). The relative speed of this response is related to the hydraulic conductivity of the geologic materials in which the well is placed. These data can then be used to estimate that hydraulic conductivity of the formation. Similarly, when the slug is removed, the water level is initially displaced downward and then "rises" back to its equilibrium position in the formation. Similar to the falling-head response, this rising-head response can be used to generate a second estimate of the hydraulic conductivity of the formation. Rising and falling head tests were performed in the following wells: MW-107, MW-109, MW-115, MW-116, MW-120, and MW-130. The data from these tests were recorded using a transducer positioned in the well and recording the well response to the slug-in and slug-out portions of the test. The position of the water level in the well was generally recorded at a frequency of every 0.5 second. Data were recorded using non-vented transducers. A barometer was used to record barometric pressure during data collection and correct for barometric changes during data reduction.

Slug test data were downloaded and corrected from barometric pressure changes using the software provided by the transducer manufacturer. Data were then used to calculate the initial displacement and subsequent return to static water level. These data were imported into AquiferWin32 Version 5 and interpreted using the Bouwer and Rice (1976) straight-line fitting method. The approach used to fit the data was to select the portion of the data that were not likely to be affected by casing-storage effects. These casing storage effects are generally present the early portion of the data and reflect the portion of the response due to relatively quick changes in head due to the ease of movement in

the well casing as opposed to the later portion of the data that reflects the slower response more representative of the resistance to flow imposed by the aquifer materials. The results of the data reduction and interpretation efforts for both falling and rising head tests at each location are summarized in the table below. Individual graphs depicting the interpretative line-fits to each test are provided in Appendix K.

Summary of Slug Test Interpreted Hydraulic Conductivity

Well ID	Falling Head K Results (ft/day)			Average Falling Head K Result	Rising Head K Results (ft/day)		Average Rising Head K Result	Overall Average K
	Test 1	Test 2	Test 3	ft/day	Test 1	Test 2	ft/day	ft/day
MW-107	2	3	-	2.5	48	13	30.5	16.5
MW-109	60	65	-	62.5	38	85	61.5	62.0
Well ID	**Falling Head K Results (ft/day)[1]**			**Average Falling Head K Result**	**Rising Head K Results (ft/day)**		**Average Rising Head K Result**	**Overall Average K**
	Test 1	**Test 2**	**Test 3**	**ft/day**	**Test 1**	**Test 2**	**ft/day**	**ft/day**
MW-115	46	22	-	34	57	25	41	37.5
MW-116	22	26	-	24	54	64	59	41.5
MW-120	17	13	-	15	10	26	18	16.5
MW-123	161	30	246	146	168	47	108	130

[1] ft/day – feet per day

Hydraulic conductivity in the wells tested at the Site varied between approximately 2 and 246 ft/day. The lowest estimated conductivity was observed in Well MW-107 and the highest was estimated at MW-123. The aquifer materials generally were reported as fill for most wells at the Site. While the data indicate a range of approximately three orders of magnitude for hydraulic conductivity, the fact that the wells are constructed in fill materials suggests this range is reasonable given the heterogeneity of fill. The fill material can reasonably be expected to vary between silty sand to low fines content sand and gravel mixes. Generally, the hydraulic conductivity appears to be higher on the southern portion of the Site based on the slug-test results in MW-109 and MW-123.

7.8.2 Tidal Evaluation

A study of the groundwater response to tidal changes was undertaken to evaluate the influence of tides on the groundwater in the shallow fill sequence at the Site. Combined water level, temperature, and specific conductivity recording transducers were deployed in 12 monitoring wells at the Site, and two water level and temperature recording transducers were deployed at river gauge locations. The river gauge transducers were deployed in RG-1 and RG-3 at the south and north ends of the Site, respectively. Wells monitored on the south end include MW-102, MW-103, MW-108, MW-110, MW-112, and E-6. Wells monitored on the north end include MW-114, MW-116, MW-117, MW-118, MW-119, and MW-122.

Transducers were deployed on the south end of the Site from March 21, 2018 at 5:30 AM until March 22, 2018 at 9:20 AM. Transducers were deployed on the north end of the Site from March 22, 2018 at 1:30 PM until March 23, 2018 at 10:30 AM. This allowed evaluation of tidal influence over a low tide to low tide cycle. The transducers deployed were of the non-vented variety. A deployed barometer recording at the same interval as the transducers was used to correct the transducer pressure readings for changes in barometric pressure. Corrected pressures readings, temperature, and specific conductance for each transducer are provided in Appendix L.

The data collected under this portion of the RI were used in both qualitative and quantitative capacities to evaluate tidal influence. Figures 7-25A and 7-25B provide a qualitative evaluation of the nature of tidal influence on groundwater elevations at the Site. Figure 7-25A depicts the largest change in groundwater elevations observed in each well at the

Site between the low tide to high tide cycle. As expected the largest changes in groundwater elevations are in the wells immediately adjacent to the shoreline. However, there are two wells, MW-114 and MW-122, located further inland that also exhibited higher than expected changes in elevation in response to tidal fluctuation.

Figures 7-26A and 7-26B depicts the maximum temperature change over the course of a tidal cycle. Similar to the head changes, the greatest temperature differences occurred in the shoreline monitoring wells. Three wells further inland had changes in temperature that were greater than the other inland wells. The wells with larger temperature differentials were MW-108, MW-114, and MW-122. The correlation of greater head changes and greater temperature swings suggests that a greater degree of connection exists between MW-114 and MW-122 and the adjacent surface water body than for other monitoring wells at the Site.

To better understand the influence of tides on monitoring wells in the shallow fill unit at the Site, time lag and head change data to estimate hydraulic diffusivity between each well and the river. Hydraulic diffusivity is a term which represents the aquifer storage (S) divided by the aquifer transmissivity (T). Hydraulic diffusivity is another measure of the ability of the aquifer materials to transmit influence from the surface water body to the aquifer. The time lag data were determined by subtracting the time at the high groundwater elevation from the time of the preceding high tide in the river. This time lag data is then entered into the equation (Jacob, 1950) for hydraulic diffusivity that follows:

$$D = x^2 P / (4\pi (lag)^2)$$

Where: x = distance from the tidal boundary
P = tidal period
lag = time shift between tide cycle phase in tidal body versus aquifer at distance x

A second method called the amplitude method was also used to evaluate tidal diffusivity. The equation for the amplitude method is provided below:

$$\frac{S}{T} = \left(\frac{P}{\pi}\right) * \left[\frac{ln\left(\frac{H_x}{h_0}\right)}{-x}\right]^2$$

Where: x = distance from the tidal boundary
P = tidal period
H_x = is the tide height in aquifer at distance x
h_0 = the tide height in the tide height in the river

The results of the time lag method and amplitude method evaluations of the Site tidal influence data are presented in in the tables below, respectively. In order to calculate hydraulic conductivity, a value of 0.03 was assumed for the storage coefficient and an average aquifer thickness of 11 feet was assumed.

Hydraulic Conductivity Estimated by Time Lag Method

Well ID	Distance from Shore (ft)	t_0 (days)	t_r (days)	S/T	T/S ft/day	Calculated K_h (ft/day)
E-6	236	0.2362	NA(1)	NA	NA	NA
MW-102	130	0.2362	NA	NA	NA	NA
MW-103	32	0.2362	0.0958	0.000477	2,096	5.7
MW-108	102	0.2362	0.1271	8.26E-05	12,109	33

Well ID	Distance from Shore (ft)	t_0 (days)	t_r (days)	S/T	T/S ft/day	Calculated K_h (ft/day)
MW-110	18	0.2362	0.0611	0.000613	1,631	4.4
MW-112	9	0.2362	0.0368	0.00089	1,124	3.07
MW-114	244	0.2362	0.0701	4.4E-06	227,474	620
MW-116	108	0.2362	NA	NA	NA	NA
MW-117	24	0.2362	0.1188	0.001302	768	2.1
MW-118	14	0.2362	0.1049	0.002985	335	0.91
MW-119	24	0.2362	NA	NA	NA	NA
MW-122	167	0.2362	0.0215	8.84E-07	1,131,109	3,085

(1) Not applicable

Hydraulic Conductivity Estimated by Amplitude Method

Well ID	Distance from Shore (ft)	H_x (ft)	H_0 (ft)	t_0 (days)	S/T	T/S	Calculated K_h (ft/day)
E-6	236	NA	5.19	0.2362	NA	NA	NA
MW-102	130	NA	5.19	0.2362	NA	NA	NA
MW-103	32	0.85	5.19	0.2362	0.00024	4,161	11
MW-108	102	0.03	5.19	0.2362	0.000192	5,211	14
MW-110	18	1.54	5.19	0.2362	0.000343	2,919	8.0
MW-112	9	0.96	5.19	0.2362	0.002643	378	1.03
MW-114	244	0.16	5.19	0.2362	1.53E-05	65,413	178
MW-116	108	NA	5.19	0.2362	NA	NA	NA
MW-117	24	0.32	5.19	0.2362	0.001013	987	2.7
MW-118	14	NA	5.19	0.2362	NA	NA	NA
MW-119	24	0.1	5.19	0.2362	0.002036	491	1.34
MW-122	167	0.64	5.19	0.2362	1.18E-05	84,675	231

The range of hydraulic conductivities estimated using the tidal methods described above is wider than the observed ranges in hydraulic conductivity estimated by slug tests. The tidal methods above are influenced by the greater volume of aquifer involved in the estimation. Slug tests only influence a very small area around the screen of the well being tested. The tidal methods are much larger in scale, involving the bulk of the aquifer between the well and the river. Those wells with higher conductivities are likely closer to more transmissive materials with connection to the shoreline. Wells MW-114 and MW-122 exhibited high transmissivities based on the tidal lag and amplitude analyses. These wells are located inland near the Riverside Avenue right-of-way. These wells appear to be located in or near more transmissive material as evidenced by the diffusivity results and the relatively larger observed differences in temperature and conductivity changes during tide cycles.

The groundwater potentiometric maps developed for the Site are depicted for high tide (on June 6, 2018) and low tide (on June 7, 2018) on Figures 7-3 and 7-4, respectively. Both maps depict a groundwater high on the south side of the Site centered on the MW-106 location with flow away from this high toward the south, north, and east. A saddle in the water table is present on the northern half of the property close to the MW-116 location with flow split into eastward and westward components. In both the high tide and low tide cases, flow moves eastward from the saddle toward the river and westward toward Riverside Avenue. The groundwater potentiometric data coupled with the data on tidal influence and hydraulic conductivity suggest that an area of lower hydraulic conductivity material forms the basis for

the divide in flow observed in the MW-116 area. Higher conductivity material to the north allows greater tidal influence and lower water table closer to Riverside Avenue.

8. RIVER WALL PIPES

As part of the subsurface utility assessment (Section 3.1), pipes in the river wall were assessed. Assessments occurred during the low tide cycle which allowed full exposure of the river wall from the river sediment at its base. Segments of the river wall are comprised of wood, steel, and concrete. Although no basement floor drains have been observed in Buildings #7 and #12, the basement floors were surveyed to provide an elevation to compare to pipe elevations.

The initial assessment occurred in September 2017 with a geophysical survey and drone survey. Several linear features were traced during the initial September 2017 geophysical survey (Section 3.1) to the bulkhead wall. Later that month, the wall was observed at low tide via drone to identify bulkhead wall pipes potentially aligning with the survey findings. Vegetation prevented assessments of parts of the river wall.

In November 2017, after clearing interfering vegetation from the bulkhead wall area, the remaining areas of the river wall were observed. Pipes identified by either drone or visual inspection were subjected to further investigation. Pipes were accessed during low tide and a snaking sonde was pushed to refusal in each of the pipes. The sonde was traced with a radio receiver from the bulkhead wall to the point of refusal. In addition, metal pipes were energized for direct frequency induction and likewise traced with the receiver to the point of refusal, or to where the signal transferred from one metal object to another. Bends along the signal path and end points were recorded and mapped via GPS.

In June 2018, additional geophysical surveying was performed to trace pipes from the bulkhead wall to building interiors with the objective of identifying the origin of each pipe. The sonde was pushed to refusal in each pipet pipe, and if the sonde could be traced to the exterior of a building, the building was entered to continue efforts to trace the pipe. The process was repeated for metal pipes using direct frequency induction.

Figure 8-1 shows the locations of bulkhead wall pipes and associated pipes that were traced from the survey. Geophysical anomalies that were traced to the bulkhead wall with no associated pipe appearing in the river wall (i.e., to the south of Building #17) are not included on these figures. Several pipes were traced to within Building #6, including a pipe connected to a roof drain. Pipes were not traceable inside other buildings. No residue or material which would be suggestive of manufacturing waste water was observed in the pipes.

Table 8-1 summarizes the findings for each bulkhead wall pipe, including the pipe material and diameter, and whether seepage was observed at the time of the investigation. Only one pipe (P57-1) was observed to have liquids emanating from it. Of the 21 pipes observed, seven have been identified as those described in the 1971 PVSC field notes (Appendix M). The PVSC field notes detail the results of an inspection of the bulkhead wall performed at the Site by PVSC in 1971. PVSC identified only seven river wall pipes and determined that these pipes were not associated with process wastewater discharges. Specifically, PVSC determined that the seven river wall pipes were either plugged/inoperable or associated with water tanks or non-contact cooling water. Of the 14 additional pipes identified during the Phase 1 investigation, four pipes were associated with a roof drain, a fire suppression water tank drain, a storm water drain, and a hot water boiler drain. The use of the remaining 10 pipes identified during Phase 1 could not be determined. None of the identified 21 pipes have been linked to manufacturing wastewater processes.

9. HISTORICAL SEDIMENT AND SURFACE WATER CHARACTERIZATION DATA REVIEW

During Phase 1, available existing Lower Passaic River sediment and surface water data for samples proximal to the Site were reviewed and evaluated to assess the potential migration of impacts from the Site to the river, with consideration given to the NJDEP Administrative Guidance entitled "Investigating Impacts from Contaminated Sites to a Surface Water" (November 2015).

9.1 SEDIMENT

To evaluate the potential historical migration of impacts from Site soils, including historic fill, to Lower Passaic River sediment, a statistical comparison was performed to compare the RI soil dataset with the historical sediment dataset in the vicinity of the Site. The parameters of the statistical analysis were as follows:

Soil results used: The entire validated 2017 RI data set, including field duplicates, was used for the on-site soil sample data set.

Sediment results used: The source of the sediment database is the data available at the Passaic River Sharepoint site maintained by the USEPA and U.S. Army Corps of Engineers (http://passaic.sharepointspace.com). Within this database, sediment samples were selected for inclusion in the initial comparison based on depth (top 30 inches of sediment) and geographic location (from 0.5 mile downstream of the Site to 0.5 mile upstream of the Site, i.e., River Miles 6.30 to 7.55, see Figure 9.1). Samples indicated as field duplicates were included. Where both validated and unvalidated data were provided for a single sample; the validated data were included.

Parameter list: A total of 27 parameters were identified for statistical analysis, including compounds designated by USEPA as Lower Passaic River compounds of concern, as well as additional compounds selected for consideration based on RI soil sample results. Parameters identified for inclusion are listed in the results table below, and included four dioxin/furan compounds, 17 PAHs, five metals, and total PCBs.

Statistical analysis: The statistical comparison was conducted using USEPA's ProUCL software to conduct a two-sided comparison test for equal means at a 95 percent confidence level. Confirmation of the test hypothesis would indicate that the means of the two data sets (soil and river sediment) were statistically equivalent, whereas rejection of the hypothesis would indicate that the mean of one data set was statistically less than or greater than that of the other.

Non-detect results were handled as required by USEPA's ProUCL software (i.e., non-detect results are identified in the input file as non-detect at the specified detection limit). Due to varying detection limits, the Gehan two-sided test was utilized, as recommended by the ProUCL user's guide.

A summary of the results of the initial comparison is shown below (dataset Kaplan-Meier means in µg/kg). For all but one of the 27 parameters reviewed, the results indicate that site soil concentrations are less than sediment concentrations. The exception is lead, for which the statistical comparison indicates that soil concentrations are similar to sediment concentrations in this section of the Lower Passaic River.

It is noted that for the dioxins/furans comparisons, the limited number of soil samples analyzed for these compounds leads to an unreliable statistical comparison. Comparison of dataset means, however, supports the conclusion that soil concentrations are less than sediment concentrations for these compounds.

Compound	Soil Data			Sediment Data			Statistical Test Result
	# Samples	% ND	Mean	# Samples	% ND	Mean	
Dioxins/Furans							
1,2,3,4,6,7,8-HpCDF	10	0%	0.178	147	2.0%	0.905	Soil < Sediment
1,2,3,4,7,8-HxCDF	10	0%	0.041	146	4.1%	0.196	Soil < Sediment
2,3,7,8-TCDD	10	0%	0.007	146	4.8%	3.38	Soil < Sediment
OCDF	10	0%	0.345	146	2.7%	1.73	Soil < Sediment
PCBs							
Total PCBs	141	41.8%	280	158	12.0%	2,099	Soil < Sediment
Metals							
Arsenic	141	0%	8,235	161	0%	13,550	Soil < Sediment
Copper	141	0%	114,100	170	0%	249,800	Soil < Sediment
Lead	141	0%	747,700	164	0%	366,700	Soil = Sediment
Mercury	141	1.42%	1,496	165	0.6%	4,389	Soil < Sediment
Zinc	141	0%	643,400	164	0.6%	654,500	Soil < Sediment
PAHs							
2-Methylnaphthalene	141	72.3%	215	179	61.5%	262	Soil < Sediment
Acenaphthene	141	64.5%	238	179	41.3%	596	Soil < Sediment
Acenaphthylene	141	80.1%	57.9	179	29.6%	469	Soil < Sediment
Anthracene	141	41.8%	504	181	13.3%	1,227	Soil < Sediment
Benzo(a)Anthracene	141	19.2%	1,187	182	3.9%	3,160	Soil < Sediment
Benzo(a)Pyrene	141	19.9%	1,053	185	3.2%	3,119	Soil < Sediment
Benzo(b)Fluoranthene	141	17.7%	1,412	181	3.3%	3,364	Soil < Sediment
Benzo(g,h,i)Perylene	141	22.0%	676	181	9.4%	1,822	Soil < Sediment
Benzo(k)Fluoranthene	141	33.3%	478	182	5.0%	1,961	Soil < Sediment
Chrysene	141	14.9%	1,193	182	3.3%	3,736	Soil < Sediment
Dibenzo(a,h)Anthracene	141	44.0%	203	179	24.0%	558	Soil < Sediment
Fluoranthene	141	13.5%	2,421	182	3.3%	5,625	Soil < Sediment
Fluorene	141	64.5%	262	179	40.2%	593	Soil < Sediment
Indeno(1,2,3-c,d)Pyrene	141	22.7%	640	181	9.9%	1,605	Soil < Sediment
Naphthalene	141	55.3%	320	179	58.1%	365	Soil < Sediment
Phenanthrene	141	16.3%	2,190	182	4.4%	3,594	Soil < Sediment
Pyrene	141	12.8%	2,296	182	2.8%	6,126	Soil < Sediment

(all means in µg/kg)
ND – not detected

9.2 SURFACE WATER

As a further evaluation of the potential impact of site discharges, including historic fill, to the river, surface water drainage patterns and available surface water data were reviewed to determine if there was a statistically significant change in surface water quality downstream of the Site compared to upstream of the Site.

An assessment of current topography and resulting surface water patterns at the Site was undertaken in Phase 1. Elevation points taken from the 2016 survey (Section 2.2) were used in Auto CADD Civil 3D to create a 3D surface. The 3D surface allowed surface hydro-flow evaluations across the various small sub-watersheds created by the topography of the Site. Evaluating the networks of minor and major flow paths created within the smaller sub-watersheds when combined results in the overall site surface water paths. The site surface water map (Figure 9-2) shows the divergence of surface flow across the Site, based on elevation and site features. Approximately 28 percent of site surface water flows toward the west (railroad tracks and Riverside Avenue).

As with sediments, the source of the surface water data reviewed for this evaluation was the Passaic River Sharepoint site maintained by the USEPA and U.S. Army Corps of Engineers (http://passaic.sharepointspace.com). Data were reviewed for the segments one mile upstream of the Site (River Miles 7.05 to 8.05) and one mile downstream of the Site (River Miles 5.80 to 6.80).

Based on the relatively limited number of surface water samples collected in the upstream segment of the river (5 data points or less for relevant analytes), a meaningful statistical analysis could not be performed. Instead, the maximum and mean concentrations for several compounds of interest were determined and tabulated as shown below.

	Upstream (7.05-8.05)			Downstream (5.80-6.80)		
Parameter	#	Max	Avg	#	Max	Avg
2,3,7,8-TCDD (ppt)*	5	1.3	0.39	42	1.87	0.055
Lead (ppb) total	4	25.7	13.1	42	33.4	12.1
Arsenic (ppb) total	4 (2 ND)	0.82	0.77	31 (4 ND)	2.11	1.17
Naphthalene (ppb)	5	all ND (10/0.19)		27 (18 ND)	0.33	0.17
Total PCBs (ppb) by 1668	2	0.021	0.018	39	0.071	0.028
Total PCBs (ppb) by 8081	3	all ND (0.5)		2	all ND (0.5)	

*ppt – parts per trillion

As shown in this table, surface water concentrations downstream of the Site are generally consistent with those upstream of the Site, indicating that the Site is not a source of impacts to the river.

10. VAPOR INTRUSION SCREENING

Groundwater data collected in Phase 1 were evaluated to determine if the VI pathway has the potential to pose an unacceptable level of risk to human health by: (1) identifying whether chemicals that can pose a risk through VI are present (e.g., VOCs), (2) comparing groundwater data against residential screening levels provided in the USEPA VI Screening Level (VISL) Calculator at a risk level of 10^{-6} or HI=0.1 (the lower of the two) at a water temperature of 25 degrees Celsius, and (3) comparing groundwater data to NJDEP VI Screening Levels (VISL).

In the March and June 2018 sampling events, 38 parameters were detected in groundwater and which are considered to be volatile and have inhalation toxicity data, including 33 VOCs, 4 SVOCs, and 1 PCB (Table 10-1). Of these compounds, the following had groundwater concentrations exceeding the corresponding residential VISL in one or more monitoring well sample locations (Figure 10-1):

Benzene (6 wells)	1,1,2-Trichloroethane (4 wells)	o-Xylene (3 wells)
Carbon tetrachloride (1 well)	Trichloroethene (3 wells)	1,1-Biphenyl (2 wells)
Chloroform (1 well)	Vinyl Chloride (3 wells)	Naphthalene (5 wells)
Ethylbenzene (5 wells)	m,p-Xylene (4 wells)	Isopropylbenzene (4 wells)

A subsequent comparison of March 2018 groundwater results to commercial VISLs was done. Of these compounds, the following had groundwater concentrations exceeding the corresponding commercial VISL in one or more monitoring well samples:

Benzene (4 wells)	1,1,2-Trichloroethane (2 wells)	o-Xylene (3 wells)
Chloroform (1 well)	Trichloroethene (1 well)	1,1-Biphenyl (2 wells)
Ethylbenzene (4 wells)	m,p-Xylene (4 wells)	Naphthalene (2 wells)

NJDEP VI Screening Levels for groundwater are higher than the residential USEPA VISLs used in the above evaluation. The only exceedances of NJDEP screening levels were at MW-106 (benzene, ethylbenzene, and TCE), MW-107 (benzene), and MW-115 (TCE).

11. REUSE ASSESSMENT

The Reuse Assessment Plan was implemented in Phase 1. The reuse assessment involved collecting and evaluating information to develop assumptions regarding the types or broad categories of reuse that might reasonably occur at a Superfund site (e.g., residential, commercial/industrial, recreational, and ecological), so that cleanup standards and remedies can be tied to reasonably expected future land use.

The Site is comprised of 15 separate lots with multiple past and current owners and tenants. Some of the lots have been investigated and remediated under NJDEP regulations. Interviews were conducted with current property owner or their representatives regarding future use of their properties. The City of Newark owned properties are subjected to a redevelopment agreement. The other ten lots are under the ownership of multiple private entities and are either vacant, or actively being used for various warehousing/storage, distribution and/or light manufacturing operations. No property owners indicated their intentions to change the current commercial/industrial uses at their properties.

The Site is located within a Dedicated Industrial Zone allowing commercial and industrial uses. These allowable uses are consistent with the more than 100 years of commercial and industrial uses at the Riverside Industrial Park. At least five lots within the Site are subject to a Deed Notice/Declaration of Environmental Restriction as required by NJDEP regulations, which are institutional controls that limit use of the properties to non-residential uses.

Based on a review of key considerations identified during preparation of this reuse assessment, both the current and reasonably anticipated future land use at the Site are consistent with industrial, non-residential uses. A copy of the Reuse Assessment Report is in Appendix N.

12. CULTURAL RESOURCE SURVEY

The Cultural Resource Survey Work Plan was implemented during Phase 1 of the RI by NV5, Inc. (NV5) of Parsippany, New Jersey (formerly RBA Group). The findings of the Phase 1A Cultural Resource Survey indicated that no archaeological resources that might meet the evaluation criteria for inclusion in the National Register are present within the Riverside Industrial Park Superfund Site. No further archaeological study was recommended. NV5's report is provided in Appendix O.

13. UPDATED CONCEPTUAL SITE MODEL

This updated conceptual site model (CSM) presents the potential sources of contamination, contaminants of potential concern, potentially affected media (soil gas, groundwater, and soil), potential transport mechanisms and potential exposure pathways following the completion of the Phase 1 investigation.

The Site is located in Newark, Essex County, New Jersey (Figure 1-1). The Site was once part of the Passaic River (tidal zone) that was backfilled with fill material in the late 1800s and early 1900s.

The Site formerly housed paint, varnish and other coatings manufacturing operations from approximately 1902 until 1971. Since then, the Site has been used for a wide variety of industrial purposes by a multitude of companies and has been subdivided into 15 parcels/lots (Figure 1-2). Surrounding properties include an abandoned petroleum bulk storage facility to the north of Lot 69 (a known groundwater impacted site with benzene according to NJDEP CEA documentation), an auto body/salvage business to the northwest of Lots 58, 59, and 69 across Riverside Avenue, and a construction contracting business to the south of Lots 67 and 68. According to historical maps, the adjoining properties to the north and northwest have been used for fuel oil storage, as a retail gas station, and a coal yard.

13.1 AFFECTED MEDIA

Historical and current operations, imported fill, and periodic river flooding events may have resulted in surface and subsurface impacts to soil and groundwater at the Site. Impacts are defined in the CSM as concentrations above the PALs. Numerous releases of hazardous materials, including PCE, have been documented at the Site.

Site soils contain impacts from petroleum hydrocarbons, PAHs, metals, VOCs, cyanide, and PCBs. Soil concentrations above PALs have been reported at depths ranging from ground surface to the top of the water table. A significant portion of the Site is covered by concrete or asphalt pavement. Ground surface soils are below the pavement in these areas.

Some of the identified soil impacts have been linked to historic fill during investigations and remedial actions conducted under NJDEP auspices. Prevalent PAL exceedances include VOCs (benzene, PCE, TCE, and methylene chloride), SVOCs/PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene), metals (arsenic, aluminum, cadmium, hexavalent chromium, lead, manganese, mercury, silver, and zinc), and PCBs (Aroclor-1254, Aroclor-1260). Pesticides/herbicides were not detected above the PAL. 2,3,7,8-TCDD was detected above the PAL in certain surface soil samples.

Groundwater is present within the fill material of the Site at depths ranging between 2 and 8 feet bgs. Shallower groundwater depths are along the river, within the UST area (described in detail in Section 5.2.2), and within the footprint of former Building #5. Groundwater levels in the fill are influenced by tidal changes, with the greatest influences adjacent to the river. Groundwater flow direction in the fill unit is primarily east toward the river, with a northwestern flow component in the northwestern corner of the Site. Deeper groundwater beneath the Site within native materials has not been investigated. It is expected that the next significant groundwater bearing zone beneath the fill unit will be encountered in glacial deposits beneath the alluvial sediments, greater than 25 feet bgs.

Groundwater samples collected during the Phase 1 investigation are representative of the shallow groundwater within the historic fill material. The identified impacts may be attributed to the fill itself or from a combination of the fill material and other contaminant sources. The contaminants exceeding PALs in groundwater include VOCs, SVOCs, PCBs, and metals. Petroleum-related VOCs (benzene, ethylbenzene, and xylene) and naphthalene have been identified as the primary contaminants in groundwater. Petroleum-related impacts in groundwater are present surrounding and downgradient of the UST area north of Building #12 as well as in the area of the former tank building (Buildings #15/15A). Acetone concentrations above the PAL are also present downgradient of the existing acetone

AST on Lot 58. Low-level concentrations of chlorinated VOCs (TCE, VC, 1,1,2-TCA, and 1,1,2,2-TCA), not indicative of DNAPL or the former presence of DNAPL, were primarily present in the southern portion of the Site, slightly above their respective PALs. 1,4-Dioxane was the most prevalent SVOC detected above the PAL within and downgradient of the former PCE spill area and the UST field area as well as at several other isolated locations throughout the Site. Benzo(a)anthracene and benzo(a)pyrene were detected above their PALs in four wells (MW-102 through MW-104, and E-2) surrounding Building #17. Aroclor-1260 was identified in groundwater above the PAL at wells located on Lots 57, 69 and 70. Total arsenic, lead, iron, manganese and sodium concentrations above their PALs were identified throughout the Site. VOC concentrations in shallow groundwater indicate that a VI pathway is a potential concern warranting additional evaluation.

NAPL was identified in two areas during the Phase 1 investigation. LNAPL (petroleum based) is present in one of the six USTs (0.9 foot thick) located north of Building #12. The March 2018 Phase 1 investigation findings vary from previous UST information. USEPA identified and sampled nine USTs in 2011. A tenth UST was found to be empty by USEPA. The presence of LNAPL material was not noted in USEPA records, and no empty UST was observed in March 2018. The difference in number of tanks is described in Section 5.2.2.

Observations of an oil-like substance were also noted at Borings B-34 and B-35 adjacent to the UST area, at depths between 5 and 7 feet bgs. Monitoring wells in the vicinity of the USTs did not have a measurable thickness of NAPL.

Petroleum-based NAPL was also identified inside the first floor of the Building #15A pump room. NAPL was identified beneath a steel grated floor and was measured to be approximately 0.5 foot to 0.65 foot thick, and consisted of a very viscous material. The presence of the NAPL in Building #15A was not previously reported.

There are no surface water features or storm water collection systems on Site.

Lower Passaic River sediment and surface water as potentially affected media were assessed in the Phase 1 investigation. As presented in Section 9, concentrations of key contaminants in the river sediment and surface water are higher than site concentrations except for lead. Lead concentrations in site soil are statistically no different than those in river sediment (and are consistent with lead concentrations found in historic fill). Based upon the Phase 1 investigation findings, the Site is not a source of concentrations reported in the Passaic River.

13.2 IDENTIFICATION OF SOURCE AND RELEASE AREAS

Possible contaminant sources include documented spills and releases, storage tanks, drum storage areas, material transfer areas, and historic fill. Unauthorized and uncontrolled waste disposal has occurred primarily on the southern end of the Site and based upon environmental records has occurred since at least the 1990s. Soil, asphalt and concrete piles are present next to Building #15. Also, past Passaic River flooding events may have deposited surface contamination onto site soils. Off-site groundwater flow emanating from adjacent upgradient sites, or intrusion from the river to the Site due to tidal or high river levels, may also be a potential source of groundwater impacts. Additionally, minor releases may have collectively contributed to widespread low-level impacts across the Site.

Based on the Phase 1 investigation results and observations, in conjunction with review of available information provided in historical reports, numerous potential source areas have been identified and evaluated, as follows:

- Historic fill – Historic fill includes fill brought onto the Site. Historic fill contains elevated concentrations of PAHs and/or metals. Phase 1 results show elevated concentrations of PAHs and metals widespread throughout the Site.
- Releases – As summarized in the 2015 SCSR, at least 12 releases were documented at the Site since 1971 along with a cleanup at Building #7 related to the former operations of Frey Industries/Jobar. The Phase 1 investigation of soil and groundwater samples assessed current conditions in these areas.

- Surface waste and debris – Debris/soil mounds are present within a former AST dike, at the former footprint of Building #5 and on Lot 58. These soil mounds of unknown origin have concentrations above soil PALs reported in the Phase 1 investigation. Additionally, at initiation of the Phase 1 investigation, surface dumping and other unauthorized activities, which had occurred and continued to occur, are possible sources. Surficial wastes removed by USEPA in 2017 and 2018 included asbestos-containing materials, household trash, construction debris, bio-hazard waste, and petroleum-impacted materials. There were vehicle salvage/dismantling activities occurring when the Phase 1 investigation started. Surficial remnants including stained soil remain from these activities.
- ASTs (active) – There are multiple ASTs that are in use at the Site. Based upon acetone concentrations in groundwater data for Lot 57, the active AST on Lot 57 (for acetone used in manufacturing) is considered a possible source of the identified groundwater impacts. Process tanks and equipment inside Buildings #10 and #14 remain in use.
- ASTs (inactive/removed) – Buildings #1, #2, #3, #16 and #17 do not have ASTs. Process equipment and tanks used by Samax have been removed from Buildings #2 and #3. In Buildings #7 and #12, USEPA removed materials from process equipment and ASTs. On some floors, the AST/process equipment were also removed. The remaining ASTs/equipment are empty and are no longer considered to be a potential source. There are several ASTs inside Building #15. USEPA investigated these ASTs, and the tanks were determined to be empty. The water surrounding the ASTs was sampled in the Phase 1 investigation, and the results were consistent with previous USEPA water results. Building #15 water and empty ASTs are, therefore, not considered to be current sources. Areas with former ASTs were sampled in the Phase 1 investigation.
- USTs – There are six USTs on Lot 64. In the Phase 1 investigation, petroleum-based NAPL was observed in one UST. Certain USTs contain constituents consistent with petroleum constituents detected in groundwater in that area. The soil around the USTs also contains petroleum-related contaminants.
- Containers (2018) – A reconnaissance of vacant buildings was conducted in the Phase 1 investigation to locate non-empty containers. In Buildings #7, #12, and #17, three containers (a hopper, a drum, and a 5-gallon bucket) with materials were located and sampled. The containers are inside buildings, are in good condition, and not exposed to the weather, and are not anticipated to be a potential source of soil or groundwater contamination.
- Containers (past) – In the NJDEP database (SCSR, April 2015), leaking drums have been reported in 1999 and 2001. Abandoned trailers at the Site with drums inside have been reported in the past. The leaking drums and abandoned drums are not a current source, as they were not observed at the Site during the Phase 1 investigation, but may be potential historical sources of impact.
- Below-grade structures – Building #15A is the former pump house associated with ASTs in Building #15. Beneath the metal floor grate is petroleum-based NAPL. Building #7 basement was remediated by USEPA and is no longer a source.
- Sewers (north) – The site sewer system appears to have active (north) and inactive (south) sections. There is flow in the northern sewer which is expected given the current processes and operations occurring there. The Phase 1 investigation north sewer water samples show various contaminants that were also found in groundwater. It is not known if the dischargers to the sewer have PVSC permits for discharge of these contaminants. The sewer system is described in more detail in Section 6.
- Sewers (south) – As the south portion of the Site is primarily vacant buildings, the southern sewer with liquids sampled in the Phase 1 investigation were classified as inactive. Unlike the north sewer, no flows were observed in the south sewer. One liquid sample from a manhole in the south sewer contained methylene

chloride concentrations higher than the concentrations reported in nearby groundwater samples. The sewer system is described in more detail in Section 6.

- Vaults – As part of the sewer assessment, utility lines were assessed in the Phase 1 investigation. Vaults with liquids were sampled. The Phase 1 findings are that the vaults accumulated precipitation and are not a source of contamination.
- Sumps – Three sumps were identified and sampled during the Phase 1 investigation. The Building #2 basement sump is pumping groundwater into the publicly owned treatment works (POTW) system. The sump in the concrete slab of former Building #4 is exposed to the weather, collecting precipitation. The basement of vacant Building #17 has a sump that likely currently collects water from roof leakages, river water from flooding and/or groundwater. There is no pumping of Buildings #4 or #17 sumps. Building #2 sump appears to be influencing groundwater flow direction. The sumps are described in more detail in Section 7.7.
- Material transfer areas – Drum storage and material handling areas (loading docks) have been present and are currently active at the Site. Soil in these areas was sampled in the Phase 1 investigation.
- Passaic River – The adjacent Lower Passaic River Superfund Site could potentially be depositing contaminants onto the Site via flooding and tidal effects.

13.3 ENVIRONMENTAL FATE AND TRANSPORT CHARACTERISTICS

As discussed in Section 3 of the Pathway Analyses Report (PAR), the chemicals of potential concern (COPCs) in soil and shallow groundwater at the Site fall into the following categories: petroleum hydrocarbons; PAHs; metals; cyanide; PCBs; dioxins/furans; and VOCs. The primary COPCs are benzene, xylenes, TCE, PCE, naphthalene, and lead. The environmental fate and transport characteristics of the COPC categories are summarized as follows:

Category	Relative Solubility in Water	Relative Volatility	Relative Persistence	Relative Bioaccumulation Potential
VOCs	Moderate to High	High	Low to High	Low
Petroleum hydrocarbons	Low to Moderate	Low to Moderate	Low to Moderate	Low
PAHs	Low to Moderate	Low to Moderate	Moderate to High	Low to Moderate
Metals	Low	Low	High	Variable
Cyanide (total)*	Moderate to High	Moderate**	Low	Low
PCBs	Low	Low	High	High
Dixons/Furans	Low	Low	High	High

*Characteristics of cyanide are highly dependent on form. Fate and transport characteristics provided in this table are based on simple forms of cyanide salts (such as sodium or potassium cyanide).

**May form hydrogen cyanide gas in the presence of water.

The solubility of a compound establishes the upper limits of the concentrations at which a compound can dissolve in water. It should be noted that in complex mixtures such as groundwater, the effective solubility of individual compounds will differ significantly from the pure compound solubility. VOCs and simple forms of cyanide salts have a high solubility in water; petroleum hydrocarbon fractions have a moderate solubility; and PCBs, PAHs, and metals generally have low solubility. PAH, metal, and PCB constituents will adsorb to suspended matter in the water column. The octanol/water

partitioning coefficient (K_{ow}) and the organic carbon/water partitioning coefficient (K_{oc}) define the tendency of a compound to adsorb to organic matter in soil relative to the affinity for water. Higher K_{ow} or K_{oc} values indicate that a compound will adsorb more strongly to soil and, therefore, will leach more slowly from soil into groundwater. VOCs generally have low to moderate K_{ow} and K_{oc} values and are, therefore, expected to be moderately mobile in soil with moderate to high solubility in water. The petroleum hydrocarbon ranges generally have low to moderate K_{ow} and K_{oc} values and are, therefore, expected to be low to moderately mobile in soil with low to moderate solubility in water. PAHs have relatively low K_{ow} values (low mobility in soil and low solubility in water); however, if released to water, PAH compounds will adsorb very strongly to soils and/or particulate matter. The PCBs, metals, and dioxins/furans generally have high K_{ow} and K_{oc} values, indicating a low mobility rate in soil and low solubility in water.

PAHs similarly will adsorb strongly to soil particulates, and leaching to groundwater is often very limited. Additionally, according to a USEPA study titled *Behavior of Metals in Soils* (Mclean & Bledsoe, 1992/EPA/540/5-92/018), metals contamination in soil will normally be retained at the soil surface. The retention mechanisms for metals in soils typically include adsorption or precipitation. The extent of movement of metals contamination in soils correlates closely with soil and groundwater properties including but not limited to pH, clay content, organic matter, and/or particle surface area. The natural weathering or changes in soil composition may increase the mobility of metals over time. PCBs experience tight adsorption when in soils and adsorption generally increases with the degree of PCB chlorination. The higher chlorinated PCBs (such as Aroclor 1260) will have a lower tendency to leach, and it is only when in the presence of organic solvents that PCBs will leach rapidly through the soil matrix.

Henry's Law constants are a relative measure of volatility. The Henry's Law constants for the VOCs at the Site are moderate to high. No Henry's Law is available for cyanide salts; in solid form, these compounds are not particularly volatile, although may form hydrogen cyanide gas when in contact with water. The Henry's Law constants for petroleum hydrocarbons are low to moderate. When PAHs are released to the air, the compounds may be subject to direct photolysis. Evaporation of PAHs from soils and/or groundwater is not a significant transport pathway. For PCBs, the rate of volatilization decreases with increasing chlorination. PCBs have negligible vapor pressure and are not expected to volatilize. If released to the atmosphere, PCBs will primarily exist in the vapor-phase, with particulate phase increasing with chlorination. Volatilization only applies to select metals (mercury) under certain conditions.

The VOCs, cyanide and petroleum hydrocarbons at the Site have short to moderate half-lives in soil and groundwater, indicating that VOCs and petroleum hydrocarbons at the Site likely degrade relatively quickly. The PAHs and metals at the Site are less susceptible to degradation and therefore relatively persistent in the environment. Biodegradation tests of PAHs in soil have resulted in a wide range of half-lives. Depending on competing fate processes, PAH half-lives can range from two days to 1.9 years, indicating a relatively moderate persistence in the environment.

Bioaccumulation is the uptake of a contaminant into an organism from the surrounding environment, and can be expressed through a bioconcentration factor. Bioconcentration factors for petroleum hydrocarbons, cyanide and VOCs at the Site are low. Some heavy metals have high bioconcentration factors and tend to bioaccumulate in plants and lower-trophic level organisms (such as soil invertebrates). PCBs and dioxins/furans have high bioconcentration factors.

13.4 POTENTIAL MIGRATION PATHWAYS

Potential contaminant transport pathways include the following:

- Storm Water Pathway – The majority of the Site is paved or under roof with approximately 72 percent of surface water at the Site flowing to the river based upon current ground surface. The remaining 28 percent would flow to the northwest, away from the river. There is no surface water management system at the Site. The lack of erosion pathways observed at the Site suggests that a significant portion of precipitation on non-paved areas infiltrates into the fill. Roof drains were built to go underground and likely connect to the PVSC system. Some roof drains currently discharge directly to the ground surface as they have been disconnected

or the connection deteriorated, eliminating their connection to underground pipes. There is evidence of a surface water drainage point to the river near Building #1.

- Soil to Groundwater Pathway – Contaminants related to surface spills or releases could migrate vertically through the historic fill until reaching the shallow groundwater bearing zone. Natural infiltration of rainwater during precipitation events could leach contaminants from the unsaturated historic fill material and transport them to the shallow groundwater bearing zone.
- Sewer Line Pathways – Samples collected from the active sewers have been found to contain various COPCs. The discharger(s) may be permitted to discharge these COPCs to the POTW. A sample from an inactive manhole was found to contain methylene chloride at concentrations above those detected in nearby groundwater samples.
- Subsurface Utilities – There are subsurface utility lines throughout the Site with many still in use. These include process, electric, sewer, gas, and water lines. Utility lines may act as preferred pathways for vapor intrusion into buildings or groundwater flow.
- USTs to Groundwater – Lot 64 USTs are in communication with groundwater at times depending upon fluctuating water table.
- Groundwater to Surface Water Pathway – Once dissolved in groundwater, contaminants may migrate in the direction of shallow groundwater flow which, for this Site, is generally to the south-southeast toward the Passaic River. A portion of the shallow groundwater flows toward Riverside Avenue, away from the river. The rate of contaminant migration in groundwater is likely limited or reduced due to the tidal influences of groundwater elevations in the fill unit and by occasional groundwater flow reversals to the west that occur during times of high river levels. The contaminant velocity will also be less than that of groundwater due to natural attenuation properties such as retardation, adsorption, biodegradation, and dilution.
- Pathways from Off-site Contaminant Sources – There are numerous off-site facilities in the area that are reported contaminated sites. There is a groundwater CEA beneath the Site from an upgradient release(s) on the adjacent property.
- River to Site Soil Pathway – Direct impacts to the Site from the Passaic River may occur during times of flooding. The northern and southern end of the river wall are soil. At high tide, the river is in contact with the soil bank.
- River to Groundwater Pathway – There are times when the waters of the Passaic River are migrating into the shallow water bearing zone of the Site due to high river levels and tidal fluctuations.
- Vapor Intrusion Pathway – The vapor intrusion pathway refers to the potential migration of volatile chemicals from the subsurface via soil gas into overlying buildings. The presence of volatile chemicals in contaminated soil or groundwater offers the potential for chemical vapors to migrate through subsurface soils and/or preferential pathways (such as underground utilities) thereby affecting the indoor air quality of site buildings.
- Airborne Dust Pathway – The majority of Site is covered with asphalt or concrete pavement. There are unpaved areas with minimal vegetation.
- River Wall Pipes – The Phase 1 investigation identified pipes along the river wall and attempted to determine the origin or source of the pipes, as described in more detail in Section 8 and Table 8-1. Only one pipe (P57-1) was observed to have liquids emanating from it. The liquid is observable during low tide and could be the result of upland tidal drainage, a leaking utility line, or another unknown source. The other pipes had no drainage associated with them and are not ongoing migration pathways.

13.5 EXPOSURE PATHWAYS, CONTACT MEDIA, AND RECEPTORS

The key exposure scenarios under current and reasonably expected future land use at around the Site are summarized on Figure 13-1 and discussed below.

13.5.1 Current Land Use

The Site is zoned for industrial use, and is sub-divided into 15 properties, seven of which are in use and the other eight are vacant. As discussed in Section 2.1, the seven occupied properties (Lots 1, 57, 59, 60, 62, 69, and 70) and three of the vacant properties (Lots 65, 66 and 67) are owned by several entities, and the other five vacant properties (Lots 58, 61, 63, 64, and 68) are owned by the City of Newark. The Site is mostly paved or covered by buildings, and is partially fenced.

Under current land use, the potentially exposed populations at the Site are as follows:

- Routine workers (at occupied properties),
- Maintenance workers, and
- Trespassers.

Routine workers consist of individuals who typically spend most of the work day indoors. Currently, routine workers are present at Lots 1, 57, 59, 60, 62, 69, and 70. While indoors, routine workers may be exposed via inhalation of volatile constituents from subsurface soil and shallow groundwater due to vapor intrusion. During their limited time outdoors, routine workers can be exposed to surface soil in areas without groundcover (e.g., no pavement, buildings). Potential routes of exposure to surface soil would include incidental ingestion, dermal contact, and inhalation of airborne soil particulates. Inhalation exposure to volatile constituents from subsurface soil is also possible while outdoors. Shallow groundwater at the Site is brackish due to tidal influence of the adjacent Passaic River, and is not used; water for potable and non-potable uses is obtained from the City of Newark. Deeper groundwater in the aquifer beneath the silty clay layer (>14 feet bgs) is used for potable and non-potable purposes within a mile of the Site, as discussed in Section 2.5.

Maintenance workers may conduct occasional subsurface maintenance or construction activities of limited size and duration (e.g., installation or repair of underground utilities, removal or repair of pavement). Subsurface activities could result in exposures to subsurface soil or shallow groundwater. Potential routes of exposure to surface and/or subsurface soil and/or shallow groundwater during such activities would include incidental ingestion, dermal contact, and inhalation of soil or groundwater vapors and airborne soil particulates.

Trespassers may be exposed to surface soil in areas of the Site without groundcover. Potential routes of exposure to surface soil would include incidental ingestion, dermal contact, and inhalation of airborne soil particulates. Inhalation exposure to volatile constituents from subsurface soil is also possible. In these areas of the Site, trespassers may also inhale vapors emitted from the exposed soil.

Under current land use, the Site may have other receptors, such as visitors, but these receptors would have lower exposures than those of the receptors listed above, which allows them to be evaluated more efficiently (i.e., without needing to perform risk calculations specific to these receptors).

Adjacent to the Site, east of McCarter Highway, are other industrial properties. West of McCarter Highway are residential properties with high-density residential units. While no site-related contamination is known to extend off Site, off-site residents and workers may be exposed to constituents in on-site soil that migrates off-site via windblown soil vapor and particulates emanating from on-site areas without groundcover. The potential for this exposure is expected to be minimal since the residences nearest the Site are across McCarter Highway (which is elevated) and uphill from the Site.

13.5.2 Future Land Use

As discussed in the Reuse Assessment Report in Appendix N, seven lots at the Site are expected to be redeveloped in the near future, including the five lots owned by the City of Newark which are part of the Redevelopment Agreement

with 123-131 Riverside Urban Renewal, LLC, and Lots 57 and 70, which may be sold within the next one to two years according to the property owners. The property owners of the remaining eight lots have indicated their intentions to continue current uses.

According to the 2013 Newark River Public Access and Redevelopment Plan (Redevelopment Plan), the Site is part of the North Ward which is located between Delavan and Fourth Avenue. The Redevelopment Plan designates the area of the Site as a "dedicated industrial zone," as shown on the North Ward Zoning Map. The Redevelopment Plan states that "the provisions of the plan protect the North Ward riverfront's status as a dedicated industrial zone, with an eye towards new job-intensive industrial development and increased future use of marine transportation." Based on a comprehensive review of the Redevelopment Plan and other factors, the Reuse Assessment Report determined that the reasonably anticipated future land use at the Site will remain industrial. Because the Site is located within a designated "dedicated industrial zone," residential uses at the Site are not permitted (e.g., one- to four-family dwellings, townhouses, and apartment dwellings above first-floor commercial units).

During redevelopment of the Site or portions of the Site, construction workers may conduct site redevelopment or renovation which may involve contact with surface and subsurface soil and shallow groundwater. Potential routes of exposure to surface and subsurface soil and shallow groundwater during such activities would include incidental ingestion, dermal contact, and inhalation of soil or groundwater vapors and airborne soil particulates.

Under post-redevelopment industrial reuse of the Site, the potentially exposed populations are the same as for current land use with the addition of a predominantly outdoor worker such as a landscaper. This receptor's potential routes of exposure to surface and subsurface soil during such activities would include incidental ingestion, dermal contact, and inhalation of soil vapor and airborne particulates. While shallow groundwater at the Site is classified by NJDEP as Class IIA, potable and non-potable use of the shallow groundwater in the future is highly improbable since the Site and surrounding area use water supplied from the City and the shallow groundwater is brackish due to tidal influence of the adjacent Passaic River. However, for consistency with NJDEP's classification, the baseline human health risk assessment (BHHRA) will include a comparison of the groundwater data to the New Jersey Class IIA groundwater quality standards and USEPA's Regional Screening Levels (RSLs) for tap water.

Residential land use at the Site in the future is also highly improbable since the Site is located within a dedicated industrial zone designated in the Redevelopment Plan, as discussed above. However, the BHHRA will include a hypothetical residential scenario which assumes the Site will have medium-density residential units like those west of McCarter Highway, to facilitate development of appropriate institutional controls for the Site. The BHHRA will evaluate exposure via vapor intrusion from soil and shallow groundwater, as well as exposure to soil while outdoors via incidental ingestion, dermal contact, and inhalation of soil vapor and particulates. These hypothetical exposures are so improbable that they will not be considered as reasonable maximum exposures (RMEs) in the BHHRA.

As shown on Figures 7-1 through 7-4 shallow groundwater at the Site is under tidal influence of the adjacent Passaic River and flows toward the river, except at a small area in the northern corner of the Site. The off-site area to the north of this area is zoned industrial and is currently a truck storage facility. Shallow groundwater flow off-site in this direction is expected to be limited by the extent of the historic fill, which may extend off Site.

13.6 SUMMARY

Site-related constituents in soil and groundwater may be attributable to former and existing industrial operations, historic fill, and off-site sources via multiple source areas and migration mechanisms. The contamination in soil and groundwater at the Site presents a potential for human exposure to COPCs under current site use, during site redevelopment, and during post-redevelopment site reuse.

14. REFERENCES

City of Newark, 2013, "Newark's River, Public Access & Redevelopment Plan," April 2013; Final Plan August 7, 2013.

Mclean & Bledsoe, *Behavior of Metals in Soils*, 1992/EPA/540/5-92/018.

Ramboll, 2018, "Pathway Analysis Report, Riverside Industrial Park Superfund Site, Newark, New Jersey," October.

Woodard & Curran, 2015a, "Site Characterization Summary Report, Riverside Industrial Park Superfund Site, Newark, New Jersey," January 9; Revised April 15.

Woodard & Curran, 2015b, "Reuse Assessment Plan, Riverside Industrial Park Superfund Site, Newark, New Jersey." August 28.

Woodard & Curran, 2017, "Remedial Investigation and Feasibility Study Work Plan, Riverside Industrial Park Superfund Site, Newark, New Jersey." Revised July 18, 2017; Conditionally Approved: August 1, 2017.

TABLES

TABLE 3-1

SEWER PIPES AND SUBSURFACE ANOMALIES

RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE

NEWARK, NEW JERSEY

Anomaly	Lot	Comments
A	67	Unknown subsurface geophysical anomaly; parallel to river, south end is at property line. No surface observations or historical maps on cause of anomaly.
B	67	Unknown subsurface geophysical anomaly. River wall to middle of Lot 67. Geophysical survey estimated at a depth of 2 feet. Southern end is clear termination (geophysical survey). No surface observations or historical maps on cause of anomaly. No wall pipe observed.
C	66	Unknown subsurface geophysical anomaly. No surface observations or historical maps on possible cause of anomaly.
D	64, 65, 68	Water line between Buildings 12 and 17. Portion of Anomaly D appears to be in 4'x4' concrete trench between Buildings 12 and 17 (Historical Map #1). Connects to water line (geophysical survey) that is between Buildings 7 and 12.
E	63, 65	Herbert Place CSO (geophysical survey, historical maps, observations).
F	63, 66	Sewer line installed by Chemical Compounds Inc. starting at Building 17. Runs between Buildings 7 and 12 and Buildings 6 and 9 to Manhole 10 (geophysical survey, historical maps, observations).
G	64	Connects to roof drains from Building 12 (geophysical survey). Runs from Building 12 transformers to east under off-property railroad tracks.
H	63	Pipe from river wall to west with termination near water line. No surface observations or historical maps on cause of anomaly. Same location as P63-1 on Table 8-1.
I	63,64	Subsurface utility trench between Buildings 7 and 12 (geophysical survey, observations).
J	64	Unknown subsurface geophysical anomaly. From Building 12 wall to clear anomaly endpoint (geophysical survey). No surface observations or historical maps on cause of anomaly.
K	62, 64	Unknown subsurface geophysical anomaly. Runs from Building 5 soil pile, through USTs into Building 9. Estimated depth 2 feet. No surface observations or historical maps on cause of anomaly. No surface manholes/vaults at change of direction points.
L	1, 62	Subsurface anomaly likely a pipe from Manhole 8 to Building 9. No surface observations or historical maps on cause of anomaly.
M	1	Unknown subsurface geophysical anomaly. Square lines in footprint of Building 4. Clear anomaly endpoint (geophysical survey). No surface observations or historical maps on cause of anomaly.
N	63	Pipe from river wall to Building 7 stairwell. Observations of pipe at river wall. No historical maps showing anomaly. Same location as P63-3 on Table 8-1.
O	63	Pipe from river wall toward Building 7 transformer area. Observations of pipe at river wall. Approximately 5 feet below ground surface and connects to Anomaly K east of the former UST locations (geophysical survey). No historical maps showing anomaly. Same location as P63-6 on Table 8-1.
P, Q	66	Two parallel unknown subsurface geophysical anomalies. River wall, next to utility pole toward Building 17, geophysical survey estimated depth 1 foot. No surface observations or historical maps on cause of anomaly. No wall pipe observed.
R	66	Unknown subsurface geophysical anomaly. From river wall continuing toward Building 17. Estimated depth 2 feet. No surface observations or historical map on cause of anomaly. No wall pipe observed.
S	61	Unknown subsurface geophysical anomaly under access road along river. Clear termination points at both ends. No surface observations or historical map observations on cause of anomaly.
T	1	Unknown subsurface geophysical anomaly. Front gate to Anomaly Z. No surface observations or historical maps on cause of anomaly.
U	58	Power conduit from guardhouse to Manhole 20 (geophysical survey, historical power distribution map). Estimate depth 3 feet.
V	60	Power conduit from Building 6 (powerhouse) to Manhole 20. (geophysical survey, historical power distribution maps). Estimated depth 2 feet.
W	60	Short unknown subsurface geophysical anomaly. River wall to terminated end. No river wall pipe observed. No surface observations or historical maps on cause of anomaly.
X	1, 57	Power conduit from Manhole 20 to Building 10 (geophysical survey, historical power distribution maps). Estimated depth 2.5 feet.
Y	60	Unknown subsurface geophysical anomaly between Buildings 1 and 10. Estimated depth 3 feet. No surface observations or historical maps on cause of anomaly.
Z	58	Unknown subsurface geophysical anomaly. From AST to Anomaly T. Clear termination end near Manhole 12. No surface observations or historical maps on cause of anomaly.

TABLE 3-1

SEWER PIPES AND SUBSURFACE ANOMALIES

RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE

NEWARK, NEW JERSEY

Anomaly	Lot	Comments
AA	57, 58	Active sanitary sewer from Manhole 16 to Riverside Avenue (geophysical survey, observations).
BB	70	Pipe from Manhole 21 (catch basin) to river wall. Depth is from 1 foot (Manhole 27) to 2 feet at wall (geophysical survey, observations). Observations of pipe at river wall. Same location as P70-1 on Table 8-1.
CC	58, 59	Unknown subsurface geophysical anomaly. Between Buildings 14 and 15 to sewer line (Line AA), west of Manhole 17. No surface observations or historical maps on cause of anomaly.
DD	70	Unknown subsurface geophysical anomaly. Asphalt area to Building 16. No surface observations or historical maps on cause of anomaly.
EE	59, 69	Unknown subsurface geophysical anomaly. Between Building 13 loading dock and Building 14. No surface observations or historical maps on cause of anomaly.
FF	59, 69	Unknown subsurface geophysical anomaly. Parallel with Anomaly EE between Buildings 13 and 14. No surface observations or historical maps on cause of anomaly.
GG	69	Unknown subsurface geophysical anomaly. Corner of Building 13 to termination point. No surface observations or historical maps on cause of anomaly.
HH	69	Pipe from Building 19 to river wall. Observations of pipe at river wall and at ground surface approximately 3 feet north of the northeast corner of Building 19. Pipe is approximately 0.3 feet below top of river wall. No historical maps on cause of anomaly. Same location as P69-1 on Table 8-1.
II	57, 58	Unknown subsurface geophysical anomaly. Shed next to Building 10 to debris area next to AST on Lot 58. No surface observations or historical maps on cause of anomaly.
KK	1, 62	Sewer line that connects Anomaly F and Manhole 10 (geophysical survey, historical map).
LL	66	Pipe from PVSC 7 ("obsolete line plugged" from PVSC notes) to Building 17. Observations of pipe at river wall. No indication inside Building 17 of this pipe. Depth is approximately 2 feet at wall (observations). Same location as PVSC-7 on Table 8-1.
MM	63	Pipe from river wall to Building 7. Observations of pipe at river wall. No indication inside Building 7 of this pipe. Aligns with roof drains in Building 7. Approximately 4 feet below top of river wall (observations). No historical maps showing anomaly. Same location as P63-2 on Table 8-1.
NN	63	Pipe from river wall to Building 7 transformer area. Observations of pipe at river wall. Approximately 2.3 feet below top of river wall (observations) and 3 feet below ground surface inland of the wall (geophysical survey). No historical maps showing anomaly. Same location as P63-4 on Table 8-1.
OO	63	Pipe from river wall toward fire escape at Building 7. Observations of pipe at river wall. Approximately 3 feet below top of river wall (observations) and 4 feet below ground surface inland of the wall (geophysical survey). No historical maps showing anomaly. Same location as P63-5 on Table 8-1.
PP	61, 63, 64	Utility corridor including three pipes visible along the east wall of Building 7 entering the building below the fire escape. Approximately 4.5 feet below ground surface (geophysical survey). Corridor terminates approximately 15 feet north of the east wall of Building 6 (geophysical survey). No historical maps showing anomaly.
QQ	64	Pipe from PVSC 6 ("jacket cooling water" pipe from PVSC notes). Observations of pipe at river wall. Pipe is approximately 1.3 feet below top of river wall (observations). Pipe is approximately 2 feet below ground surface inland of wall and terminates approximately 25 feet west of wall (geophysical survey). No historical maps showing anomaly. Same location as PVSC-6 on Table 8-1.
RR	61	Pipe from river wall to below Building 6 and connecting to Anomaly F. Observations of pipe at river wall. Pipe is approximately 2.3' below top of river wall (observations) and 3 feet below ground surface inland of wall (geophysical survey). No historical maps showing anomaly. Same location as P61-1 on Table 8-1.
SS	61	Pipe from PVSC 4 (pipe "containing cooling water from air compressor and after cooler" from PVSC notes). Observations of pipe at river wall. Pipe is approximately 4.7 feet below top of river wall. Pipe is approximately 4 feet below ground surface inland of wall and terminates below Building 6. No historical maps showing anomaly. Same location as PVSC-4 on Table 8-1.
TT	61	Pipe from river wall to termination at east wall of Building 6 (geophysical survey). Observations of pipe at river wall. Pipe is approximately 2.3 feet below top of river wall (observations). Pipe is approximately 2 feet below ground surface inland of the wall and terminates near the east wall of Building 6 (geophysical survey). No historical maps showing anomaly. Same location as P61-3 on Table 8-1.
UU	61	Pipe from PVSC 3 (pipe which "contains cooling water from air compressor and after cooler" from PVSC notes). Observations of pipe at river wall. Pipe is approximately 4.3 feet below top of river wall (observations). Pipe is approximately 3 feet below ground surface inland of the wall and terminates at east wall of Building 6 (geophysical survey). No historical maps showing anomaly. Same location as PVSC-3 on Table 8-1.
VV	61	Pipe from river wall to termination at east wall of Building 6 (geophysical survey). Observations of pipe at river wall. Pipe is approximately 3.2 feet below top of river wall (observations). Pipe is approximately 3 feet below ground surface inland of the wall and terminates near the east wall of Building 6 (geophysical survey). No historical maps showing anomaly. Same location as P61-5 on Table 8-1.

TABLE 3-1

SEWER PIPES AND SUBSURFACE ANOMALIES

RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE

NEWARK, NEW JERSEY

Anomaly	Lot	Comments
WW	61	Pipe from PVSC 2 (10 inch inlet for water tank on Building 10). Observations of pipe at river wall. Pipe is approximately 6.7 feet below top of river wall (observations). Pipe is approximately 4 feet below ground surface inland of the wall and terminates approximately 10 feet west of wall (geophysical survey). No historical maps showing anomaly. Same location as PVSC-2 on Table 8-1.
XX	61	Unknown subsurface geophysical anomaly between river wall and northeast corner of Building 6. Approximately 10 feet in length (geophysical survey). No surface observations or historical maps on cause of anomaly.
yy	61	Pipe from PVSC 1 ("opening in bulkhead, storm drain"" from PVSC notes). Observations of pipe at river wall. Pipe is approximately 6.5 feet below top of river wall (observations) and terminates approximately 10 feet west of wall (geophysical survey). No historical maps showing anomaly. Same location as PVSC-1 on Table 8-1.
ZZ	57	Pipe from river wall to termination at east wall of Building 10 (geophysical survey). Observations of pipe at river wall. Pipe is approximately 6 feet below top of river wall (observations). Pipe is likely the drain for the water tank on the roof of Building 10. No historical maps showing anomaly. Same location as P57-1 on Table 8-1.
AB	70	Pipe from river wall to termination at east wall of Building 16 (geophysical survey). Observations of pipe at river wall. Pipe is approximately 2 feet below top of river wall (observations) and 3 feet below ground surface (geophysical survey). No historical maps showing anomaly. Same location as P70-2 on Table 8-1.
AC	70	Pipe from river wall to clear termination approximately 50 feet west of wall (geophysical survey). Observations of pipe at river wall. Pipe is approximately 5.3 feet below top of river wall (observations). No historical maps showing anomaly. Same location as P70-3 on Table 8-1.
AD	57	Pipe from vent riser located in concrete vault adjacent to the west wall of Building 10 to clear termination at the stick-up flow meters approximately 45 feet southwest of the vent riser (geophysical survey). Pipe is approximately 2.5 feet below ground surface (geophysical survey). No surface observations or historical maps on cause of anomaly.
AE	62	Pipe partially exposed in crawl space below Building 9 and traced to east wall of Building 3 (geophysical methods). Pipe ties into original roof drains inside Building 9 that have been abandoned and drainage routed to the building exterior (observations). No historical maps showing anomaly.
AF	66	Pipe exposed in the basement at the northwest corner of Building 17. Clear termination of pipe approximately 15 northwest of wall (geophysical methods). No historical maps showing anomaly.
AG	66	Unknown subsurface geophysical anomaly from midway along the west wall of Building 17 to clear termination approximately 30 northwest of wall. Possible sanitary storm sewer. No surface observations or historical maps on cause of anomaly.
AH	57, 70	Pipe from concrete vault at the southeast corner of Building 16 to clear termination at the AC compressor along the north wall of Building 10 (geophysical survey). Pipe is approximately 2 feet below ground surface (observations and geophysical survey). No historical maps showing anomaly.

Note: Labeled anomaly designations are shown on Figure 3-1.

TABLE 3-2
PHASE 1 SOIL SAMPLE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

2017 Phase 1 Sampling Location/Designation [a]	Sample Depth (ft bgs) [b]	Number of Phase 1 Samples / Frequency [c]
Soil Boring Samples		
B-3(1-2)-102517	1-2'	1
B-3(2-3)-102517	2-3'	1
B-4(0-1)-100617	0-1'	1
B-4(1-3)-100617	1-3'	1
B-5(0.5-1.5)-101317	0.5-1.5'	1
B-5(5-6.5)-101317	5-6.5'	1
B-6(3.5-4.5)-101717	3.5-4.5'	1
B-6(5-5.5)-101717	5-5.5'	1
B-7(0.5-1.5)_101017	0.5-1.5'	1
B-7(5-6)_101017	5-6'	1
B-8(1.5-2.5)_101017	1.5-2.5'	1
B-8(5-6.25)_101017	5-6.25'	1
B-9(0-1)_101617	0-1'	1
B-9(5-6)_101617	5-6'	1
B-10(3-5)-101617	3-5'	1
B-12(0-1)-101317	0-1'	1
B-12(1-3)-101317	1-3'	1
B-13(0-1)_101117	0-1'	1
B-13(1-3)_101117	1-3'	1
B-14(0-1)-101717	0-1'	1
B-14(7-7.5)-101717	7-7.5'	1
B-15(0.25-1.25)-101717	0.25-1.25'	1
B-15(5-6)-101717	5-6'	1
B-16(0-1)_101217	0-1'	1
B-16(7-7.75)_101217	7-7.75	1
B-17(0.25-1.25)-101717	0.25-1.25'	1
B-17(5-6.5)-101717	5-6.5'	1
DUP-6 [d]	5-6.5'	1
B-18(0-1)_101217	0-1'	1
B-18(5-6)_101217	5-6'	1
B-19(0-1)-101117	0-1'	1
B-19(2-4)_101117	2-4"	1
B-20(3.5-4)-101817	3.5-4'	1
B-20(5-6)-101817	5-6'	1
B-22(0-1)-100617	0-1'	1
B-22(1-3)-100617	1-3'	1
B-23(0-1)-100517	0-1'	1
B-23(1-3)-100517	1-3'	1

TABLE 3-2
PHASE 1 SOIL SAMPLE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

2017 Phase 1 Sampling Location/Designation [a]	Sample Depth (ft bgs) [b]	Number of Phase 1 Samples / Frequency [c]
B-24(0.5-1.5)-100517	0.5-1.5'	1
B-24(1.5-3.5)-100517	1.5-3.5'	1
DUP-3	1.5-3.5'	1
B-25(0.5-1.5)-100517	0.5-1.5'	1
B-25(5-5.5)-100517	5-5.5'	1
B-26(0.5-1.5)-100517	0.5-1.5	1
B-26(5-5.8)-100517	5-5.8'	1
B-27(0.5-1.5)-100517	0.5-1.5'	1
B-27(5-5.5)-100517	5-5.5'	1
B-28(0.5-1.5)-100917	0.5-1.5'	1
B-28(1.5-2.75)-100917	1.5-2.75'	1
B-29(0-1)-092917	0-1'	1
B-29(1-3)-092917	1-3'	1
B-30(0-1)-100417	0-1'	1
B-30(3-3.8)-100417	3-3.8'	1
B-31-(1-2)-101817	1-2'	1
B-31-(5-5.5)-101817	5-5.5'	1
B-32(1-2)-100417	1-2'	1
B-32(2-4)-100417	2.4'	1
B-33(0.5-1.5)-100417	0.5-1.5'	1
B-33(3.5-4.5)-100417	3.5-4.5'	1
B-34(0-1)-100617	0-1'	1
B-34(5-5.5)-100617	5-5.5'	1
B-35(1-2)-100417	1-2'	1
B-35(2-3.8)-100417	2-3.8'	1
B-36(0-1)-100417	0-1'	1
B-36(3-3.7)-100417	3-3.7'	1
B-37(0-1)-100417	0-1'	1
B-37(1-3)-100417	1-3'	1
B-38(FILL)_100917	FILL [e]	1
B-38(0-1)_100917	0-1'	1
DUP-4	0-1'	1
B-38(1-3)_100917	1-3'	1
B-39(0.5-1.5)-100317	0.5-1.5'	1
B-39(5-7)-100317	5-7'	1
B-40(0-1)-092617	0-1'	1
B-40(5-7)-092717	5-7'	1
B-41(0-1)-092617	0-1'	1
B-41(5-7)-092717	5-7'	1
B-42(0.3-1.3)_100217	0.3-1.3'	1

TABLE 3-2
PHASE 1 SOIL SAMPLE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

2017 Phase 1 Sampling Location/Designation [a]	Sample Depth (ft bgs) [b]	Number of Phase 1 Samples / Frequency [c]
B-42(7-9)-100217	7-9'	1
B-43(0-1)-092617	0-1'	1
B-43(5-7)-092617	5-7'	1
B-44(0-1)-100217	0-1'	1
B-44(5-5.5)_100217	5-5.5'	1
B-51(1-2)-092817	1-2'	1
B-51(5-7)-092817	5-7'	1
B-52(0-1)-102317	0-1'	1
B-52(1-3)-102317	1-3'	1
B-53(0-1)-092817	0-1'	1
B-53(1-3)-092817	1-3'	1
B-54(1-2)-092817	1-2'	1
B-54(7-8)-092817	7-8'	1
B-55(0.5-1.5)-100317	0.5-1.5'	1
B-55(3.5-5)-100317	3.5-5'	1
B-56(1-2)-092717	1-2'	1
B-56(2-4)-092717	2-4'	1
B-57(1-2)-100317	1-2'	1
B-57(2-4)-100317	2-4'	1
B-58(1-2)-092717	1-2'	1
B-58(6-8)-092717	6-8'	1
B-59(FILL)-100317	FILL	1
B-59(5-7)-100317	5-7'	1
DUP-2	5-7'	1
B-59(12-13.5)-100317	12-13.5'	1
B-60(FILL)-092617	FILL	1
B-60(0-1)-092617	0-1'	1
B-60(5-7)-092617	5-7'	1
B-61(0-1)-101117	0-1'	1
B-61(5-6)-101117	5-6'	1
B-62(0-1)-101117	0-1'	1
B-62(5-5.5)-101117	5-5.5'	1
B-63(0-1)-101117	0-1'	1
B-63(1-3)-101117	1-3'	1
B-64(1.5-2.5)-101117	1.5-2.5'	1
DUP-5	1.5-2.5'	1
B-64(2.5-4.5)-101117	2.5-4.5'	1
B-65(0.5-1.5)-101317	0.5-1.5'	1
B-65(1.5-2.7)-101317	1.5-2.7'	1
B-66(1.5-2.5)_101017	1.5-2.5'	1

TABLE 3-2
PHASE 1 SOIL SAMPLE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

2017 Phase 1 Sampling Location/Designation [a]	Sample Depth (ft bgs) [b]	Number of Phase 1 Samples / Frequency [c]
B-66(2.5-4.5)_101017	2.5-4.5'	1
B-67(1.5-2.5)_101017	1.5-2.5'	1
B-67(2.5-3.8)-101017	2.5-3.8'	1
B-68(1-2)-102417	1-2'	1
B-69(0-1)-092717	0-1'	1
B-69(1-3)-092717	1-3'	1
B-70(0-1)-092717	0-1'	1
B-70(5-7)-092717	5-7'	1
B-71(3-5)-101617	3-5'	1
B-74(0-1)-100417	0-1'	1
B-74(3-4)-100417	3-4'	1
B-75(0-1)-092917	0-1'	1
B-75(1-3)-092917	1-3'	1
B-76(0-1)-102317	0-1'	1
B-76(1-3)-102317	1-3'	1
DUP-7	1-3'	1
B-77(0-1)-092817	0-1'	1
B-77(1-3)-092817	1-3'	1
DUP-1	1-3'	1
B-78(0.5-1.5)-102517	0.5-1.5'	1
B-78(5-7)-102517	5-7'	1
B-79(1-2)-102617	1-2'	1
B-79(5-6)-102617	5-6'	1

Notes:

a) Laboratory submitted soil sample ID.

b) "Feet bgs" - feet below ground surface.

c) Number of samples collected at depth interval per boring listed.

d) "DUPs" are listed below the sample they correspond with.

e) "Fill" indicates this sample interval was collected from fill/debris piles located above the surface sample.

TABLE 2-3

PHASE I SUMMARY OF MATRICES, ANALYSES AND LABORATORY LOCATIONS

RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE

NEWARK, NEW JERSEY

Matrix	VOCs	SVOCs	Metals	PCBs	Pesticides	Herbicides	Other
Sewer Water	SOM02.4 (TA Burlington)[a]	SOM02.4 (TA Burlington)	ISM02.4 ICP-MS, Hg & Cn - ISM02.4 (TA Burlington)	SOM02.4 (TA Burlington)	N/A	N/A	N/A
Groundwater Permanent Wells and Sumps	SW-846 8260C low level, SW-846 8260C (TA Seattle)	SOM02.4, SOM02.4_SIM for PAHs, EPA 522 (1,4-Dioxane) (TA Burlington)	ISM02.4 ICP-MS, Hg - ISM02.4 (TA Burlington), Cyanide SW846-9012B (TA Pensacola), CrVI SW-846 7196A (TA Edison)	SW-846 8082A low level (TA Pittsburgh)	N/A	N/A	N/A
Temporary Well Points	SW-846 8260C (Chemtech)	SOM02.4 (Chemtech)	ISM02.4 ICP-MS Hg - ISM02.4 (Chemtech) CN - SW-846 9012B (Chemtech)	SW-846 8082A (Chemtech)	N/A	N/A	N/A
NAPL	N/A[b]	N/A	N/A	N/A	N/A	N/A	Saturated Hydrocarbons EPA 8015D – Crude (TA Nashville)
Waste Class and Containers	TCLP 8260B (Chemtech & TA Edison), SOM02.4 (TA Burlington)	TCLP 8270D (Chemtech & TA Edison)	TCLP SW-846 6010B TCLP SW-846 7470A (Chemtech & TA Edison)	SW-846 8082A (Chemtech & TA Edison)	N/A	N/A	Flashpoint Solid SW-846 1030 (Chemtech & TA Edison), Flashpoint Liquid SW-846 1020B (Chemtech & TA Edison), Corrosivity Solid SW-846 9045C (Chemtech & TA Edison), Corrosivity Liquid SW-846 9040C (Chemtech & TA Edison), Cyanide Solid/Liquid SW-846 9012B (Chemtech & TA Edison), Sulfide Solid SW-846 9034, Sulfide Liquid SM4500 S2 F (Chemtech & TA Edison)
Soil/Historic Fill	SOM02.4 (Chemtech)	SOM02.4, SOM02.4_SIM for PAHs (Chemtech)	ISM02.4_MS, ISM02.4 - Hg, Cn, (Chemtech) CrVI SW-846 3060A/7199, (SGS Accutest)	SOM02.4 (Chemtech)	SOM02.4 (Chemtech), SW-846 8081B for Dieldrin (Chemtech)	SW-846 8151A (Chemtech)	Dioxins/Furans EPA 1613B (SGS-NA), CrVI Follow Up (SGS Accutest): REDOX ASTM D1498, pH SW-846 9045D, Ferrus Iron – ASTM D3872-86, Sulfide – SW-846 4500-S, TOC – Lloyd Kahn

Notes:

a. Laboratory location is in parenthesis. TA – TestAmerica Laboratories; SGS NA – SGS North America.

b. N/A – not analyzed.

TABLE 3(A)

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-3(1-2)-102517	B-3(2-3)-102517	B-4(0-1)-100617	B-4(1-3)-100617	B-5(0.5-1.5)-101317	B-5(5-6.5)-101317	B-6(3.5-4.5)-101717	B-6(5-5.5)-101717	B-7(0.5-1.5)-101017	B-7(5-6)-101017
SAMPLE DEPTH (FT BGS)		1-2	2-3	0-1	1-3	0.5-1.5	5-6.5	3.5-4.5	5-5.5	0.5-1.5	5-6
COLLECTION DATE:		10/25/2017	10/25/2017	10/6/2017	10/6/2017	10/13/2017	10/13/2017	10/17/2017	10/17/2017	10/10/2017	10/10/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	65 U	0.91 U	1 UJ	1 UJ	0.86 U	0.89 U	1.1 U	0.94 U	0.92 UJ	0.77 U
1,1-DICHLOROETHANE	200	69 U	0.96 U	1.1 U	1.1 U	0.91 UJ	0.94 U	1.1 U	1 U	0.98 U	0.82 U
1,2-DIBROMO-3-CHLOROPROPANE	5	44 U	0.61 U	36 U	0.68 UJ	0.57 R	0.59 UJ	0.72 U	0.63 U	35 U	0.52 U
1,3-DICHLOROBENZENE	19000	49 U	0.68 U	40 U	0.75 UJ	0.64 U	0.66 U	0.8 U	0.7 U	39 U	0.58 U
2-HEXANONE	200000	120 U	1.7 U	1.9 UJ	1.9 UJ	1.6 U	1.7 U	2 U	1.8 U	1.7 UJ	1.4 U
ACETONE	19000	300 J	99	3000	170	47	23	25	25	640	64
BENZENE	5	*2000*	0.95 U	1.1 UJ	4.8 J	0.9 U	0.93 U	1.1 U	0.99 U	*360*	*22 J+*
CARBON DISULFIDE	6000	55 U	0.76 U	0.85 U	0.85 U	0.72 U	0.74 U	0.9 U	0.79 U	0.77 U	0.65 U
CHLOROBENZENE	600	68 U	0.94 U	1.1 UJ	1.1 UJ	0.89 U	0.92 U	1.1 U	0.98 U	0.96 UJ	0.81 U
CHLOROETHANE	220000	47 U	0.66 U	0.73 U	0.73 U	0.62 U	0.64 U	0.78 U	0.68 U	0.67 U	0.56 U
CHLOROFORM	320	83 U	1.2 U	1.3 U	1.3 U	32 J-	11	1.4 U	1.2 U	1.2 U	0.98 U
CIS-1,2-DICHLOROETHYLENE	300	63 U	0.87 U	0.97 U	0.97 U	0.82 U	0.85 U	1 U	0.9 U	0.88 U	0.74 U
CYCLOHEXANE	6500000	67 U	0.93 U	1 UJ	1 UJ	0.88 U	0.91 U	1.1 U	0.97 U	0.95 UJ	0.8 U
ETHYLBENZENE	5800	470	6.3	0.97 UJ	0.97 UJ	0.82 U	0.85 U	1 U	0.91 U	450	0.74 U
ISOPROPYLBENZENE (CUMENE)	1900000	58 U	0.81 U	0.9 UJ	0.9 UJ	0.76 U	0.79 U	0.96 U	0.84 U	0.82 UJ	0.69 U
M,P-XYLENE	19000	2800	38	0.85 UJ	15 J+	0.72 U	0.74 U	0.9 U	0.79 U	2900	6.7
METHYL ACETATE	22000	240 J	1.8 U	2 U	2 U	1.7 U	1.7 U	2.1 U	1.9 U	1.8 U	1.5 U
METHYL ETHYL KETONE	900	200 U	2.8 U	3.1 U	3.1 U	2.6 U	2.7 U	3.3 U	2.9 U	73	2.4 U
METHYL ISOBUTYL KETONE	33000000	170 U	2.3 U	2.6 UJ	2.6 UJ	2.2 U	2.3 U	2.7 U	2.4 U	32 J+	2 U
METHYLCYCLOHEXANE	NE	150 J	8.9	0.94 UJ	0.94 UJ	0.79 U	0.82 U	1 U	0.87 U	230 J	0.72 U
METHYLENE CHLORIDE	10	40 U	*15*	*18 B*	*14 B*	9.4 U	9.6 U	11.8 U	10.4 U	10 U	8.5 JU
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	550	18	0.86 UJ	0.86 UJ	0.73 U	0.75 U	0.91 U	0.8 U	560	0.66 U
TETRACHLOROETHYLENE (PCE)	5	60 U	0.83 U	0.93 UJ	0.93 UJ	0.79 U	0.81 U	0.99 U	0.87 U	0.85 UJ	0.71 U
TOLUENE	7000	6400	0.9 U	1 UJ	6.1 J+	0.85 U	0.88 U	1.1 U	0.94 U	1100	13
TRANS-1,2-DICHLOROETHENE	600	74 U	1 U	1.1 U	1.1 U	0.96 U	1 U	1.2 U	1.1 U	1 U	0.87 U
TRICHLOROETHYLENE (TCE)	10	67 U	0.93 U	1 UJ	1 UJ	0.88 U	0.91 U	1.1 U	0.96 U	0.94 UJ	0.79 U
VINYL CHLORIDE	5	55 U	0.76 U	0.85 U	0.85 U	0.72 U	0.75 U	0.91 U	0.79 U	0.78 U	0.65 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

J+ - The result is an estimated quantity, and the result may be biased high.

J- - The result is an estimated quantity, and the result may be biased low.

R - The reported analyte concentration is rejected due to serious deficiencies with associated quality control results. The presence or absence of the analyte cannot be confirmed. The data may not be suitable for its intended project use.

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE 3-4A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-8(1.5-2.5)-101017	B-8(5-6.25)-101017	B-9(0-1)-101617	B-9(5-6)-101617	B-10(3-5)-101617	B-12(0-1)-101317	B-12(1-3)-101317	B-13(0-1)-101117	B-13(1-3)-101117	B-14(0-1)-101717
SAMPLE DEPTH (FT BGS)		1.5-2.5	5-6.25	0-1	5-6	3-5	0-1	1-3	0-1	1-3	0-1
COLLECTION DATE:		10/10/2017	10/10/2017	10/16/2017	10/16/2017	10/16/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/17/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	0.81 U	46 U	1 UJ	1.1 U	0.99 U	1.3 UJ	1.7 UJ	1 U	51 U	0.95 U
1,1-DICHLOROETHANE	200	0.86 U	49 U	1.1 U	1.2 U	1 U	1.4 U	1.8 U	1.1 R	54 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.54 UJ	31 U	0.68 R	0.73 U	0.66 U	0.87 R	1.1 UJ	0.7 R	34 U	0.64 U
1,3-DICHLOROBENZENE	19000	0.61 UJ	34 U	0.76 R	0.81 U	0.74 U	0.97 R	1.3 UJ	0.77 UJ	38 U	0.71 U
2-HEXANONE	200000	1.5 U	86 U	1.9 UJ	2 U	1.8 U	2.4 UJ	3.2 UJ	1.9 R	96 U	1.8 U
ACETONE	19000	79	11000	3.1 U	280	18	230	63	120 J-	220	2.9 U
BENZENE	5	0.85 U	49 U	1.1 UJ	1.1 U	1 U	1.4 UJ	1.8 UJ	1.1 U	54 U	1 U
CARBON DISULFIDE	6000	0.68 U	39 UJ	0.85 U	0.91 U	0.83 U	1.1 U	1.4 U	0.87 U	43 U	0.8 U
CHLOROBENZENE	600	0.85 U	48 U	1.1 UJ	1.1 U	1 U	1.4 UJ	1.8 UJ	1.1 U	53 U	0.99 U
CHLOROETHANE	220000	0.59 U	33 UJ	0.74 U	0.79 U	0.72 U	0.94 U	1.2 U	0.75 U	37 U	0.69 U
CHLOROFORM	320	1 U	59 U	1.3 U	1.4 U	8.1	1.7 U	2.2 U	53 J-	65 U	1.2 U
CIS-1,2-DICHLOROETHYLENE	300	0.78 U	44 U	0.97 U	1 UJ	0.95 U	1.3 U	1.6 U	1 U	49 U	0.91 U
CYCLOHEXANE	6500000	0.84 U	48 U	1 UJ	1.1 U	1 U	130 J	1.8 UJ	1.1 U	53 U	0.98 U
ETHYLBENZENE	5800	0.78 U	44 U	0.98 UJ	1 U	0.95 U	***6800 D***	***7500 D***	16	***10000***	0.91 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.73 U	41 U	0.91 UJ	0.97 U	0.88 U	1.2 UJ	1.5 UJ	0.93 U	570	0.85 U
M,P-XYLENE	19000	0.68 U	39 U	0.85 UJ	17	0.83 U	***23000 D***	***23000 D***	120	***95000 D***	0.8 U
METHYL ACETATE	22000	1.6 U	91 U	2 U	2.1 U	1.9 U	2.6 U	3.4 U	2.1 U	100 U	1.9 U
METHYL ETHYL KETONE	900	2.5 U	140 U	3.1 U	3.3 U	3 U	4 U	5.2 U	69 J-	56	2.9 U
METHYL ISOBUTYL KETONE	33000000	2.1 U	120 U	2.6 UJ	2.8 U	2.5 U	3.3 UJ	4.3 UJ	2.7 R	49 J+	2.4 U
METHYLCYCLOHEXANE	NE	0.75 U	43 U	0.94 UJ	1 U	0.92 U	8800 D	9800 D	0.96 U	360	0.88 U
METHYLENE CHLORIDE	10	0.5 U	29 U	0.63 U	0.67 U	0.61 U	0.81 U	1.1 U	***12 B***	***13 B***	10.4U
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.69 U	39 U	0.86 UJ	0.92 U	0.84 U	2300 J	2000 J	54	***29000 D***	0.81 U
TETRACHLOROETHYLENE (PCE)	5	0.75 U	43 U	0.94 UJ	1 U	0.91 U	1.2 UJ	1.6 UJ	0.96 U	47 U	0.87 U
TOLUENE	7000	0.81 U	160 J	1 UJ	8.3	0.98 U	6700 D	5800 D	56	3300 J	0.95 U
TRANS-1,2-DICHLOROETHENE	600	0.91 U	52 U	1.1 U	1.2 UJ	1.1 U	1.5 U	1.9 U	1.2 U	58 U	1.1 U
TRICHLOROETHYLENE (TCE)	10	0.83 U	47 U	1 UJ	1.1 U	1 U	1.3 UJ	1.7 UJ	***40***	52 U	0.97 U
VINYL CHLORIDE	5	0.68 U	39 U	0.86 U	0.92 U	0.83 U	1.1 U	1.4 U	0.88 U	43 U	0.8 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-14(7-7.5)-101717	B-15(0.25-1.25)-101717	B-15(5-6)-101717	B-16(0-1)-101217	B-16(7-7.75)-101217	B-17(0.25-1.25)-101717	B-17(5-6.5)-101717	DUP-6-101717 B-17(5-6.5)	B-18(0-1)-101217
SAMPLE DEPTH (FT BGS)		7-7.5	0.25-1.25	5-6	0-1	7-7.75	0.25-1.25	5-6.5	5-6.5	0-1
COLLECTION DATE:		10/17/2017	10/17/2017	10/17/2017	10/12/2017	10/12/2017	10/17/2017	10/17/2017	10/17/2017	10/12/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)										
1,1,1-TRICHLOROETHANE (TCA)	300	0.89 U	1.1 U	0.86 U	62 U	0.89 UJ	1.1 U	0.85 U	0.98 U	0.97 U
1,1-DICHLOROETHANE	200	0.94 U	1.1 U	0.91 U	65 U	0.95 U	1.2 U	0.9 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.59 U	0.71 UJ	0.58 U	41 U	0.6 U	0.75 UJ	0.57 U	0.66 U	0.65 U
1,3-DICHLOROBENZENE	19000	0.66 U	0.79 UJ	0.64 U	46 U	0.67 U	0.83 UJ	0.63 U	0.73 U	0.73 U
2-HEXANONE	200000	1.7 U	2 U	1.6 U	110 U	1.7 UJ	2.1 U	1.6 U	1.8 U	1.8 U
ACETONE	19000	11	75	12	190 UJ	30	22	20	13	2.9 U
BENZENE	5	0.93 U	1.1 U	0.9 U	65 U	0.94 UJ	1.2 U	0.89 U	1 U	1 U
CARBON DISULFIDE	6000	0.74 U	0.89 U	0.72 U	52 U	0.75 U	0.94 U	0.71 U	0.82 U	0.82 U
CHLOROBENZENE	600	0.92 U	1.1 U	0.9 U	64 U	0.93 UJ	1.2 U	0.88 U	1 U	1 U
CHLOROETHANE	220000	0.64 U	0.77 U	0.62 U	45 U	0.65 U	0.81 U	0.61 U	0.71 U	0.7 U
CHLOROFORM	320	1.1 U	1.3 U	1.1 U	78 U	1.1 U	1.4 U	1.1 U	1.2 U	1.2 U
CIS-1,2-DICHLOROETHYLENE	300	0.85 U	1 U	0.82 U	***630***	0.86 U	1.1 U	0.81 U	0.94 U	0.93 U
CYCLOHEXANE	6500000	0.91 U	1.1 U	0.89 U	63 U	0.92 UJ	1.2 U	0.87 U	1 U	1 U
ETHYLBENZENE	5800	0.85 U	1 U	0.83 U	1000	16 J+	1.1 U	0.81 U	0.94 U	0.94 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.79 U	0.94 U	0.77 U	55 U	21 J+	1 U	0.75 U	0.87 U	0.87 U
M,P-XYLENE	19000	0.74 U	0.89 U	0.72 U	10000	1500 J	0.94 U	0.71 U	0.82 U	0.82 U
METHYL ACETATE	22000	1.7 U	2.1 U	1.7 U	350	1.8 U	2.2 U	1.7 U	1.9 U	1.9 U
METHYL ETHYL KETONE	900	2.7 U	3.2 U	2.6 U	190 U	2.7 U	3.4 U	2.6 U	3 U	3 U
METHYL ISOBUTYL KETONE	33000000	2.3 U	2.7 U	2.2 U	160 U	2.3 UJ	2.9 U	2.2 U	2.5 U	2.5 U
METHYLCYCLOHEXANE	NE	0.82 U	0.98 U	0.8 U	57 U	6.1 J+	1 U	0.78 U	0.91 U	0.9 U
METHYLENE CHLORIDE	10	9.6U	0.65 U	9.4U	***2000***	***12 B***	12.2U	9.2U	10.8U	0.6 U
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.75 U	0.9 U	0.73 U	1100	720 J	0.95 U	0.72 U	7.3	0.83 U
TETRACHLOROETHYLENE (PCE)	5	0.82 U	0.97 U	0.79 U	57 U	4.4 JJ+	1 U	0.78 U	0.9 U	0.9 U
TOLUENE	7000	0.88 U	1.1 U	0.86 U	3800	17 J+	1.1 U	0.84 U	7.5	0.97 U
TRANS-1,2-DICHLOROETHENE	600	1 U	1.2 U	0.97 U	69 U	1 U	1.3 U	0.95 U	1.1 U	1.1 U
TRICHLOROETHYLENE (TCE)	10	0.91 U	1.1 U	0.88 U	***2000***	0.91 UJ	1.1 U	0.86 U	1 U	1 U
VINYL CHLORIDE	5	0.75 U	0.89 U	0.72 U	52 U	0.75 U	0.94 U	0.71 U	0.82 U	0.82 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-18(5-6)-101217	B-19(0-1)-101117	B-19(2-4)-101117	B-20(3.5-4)-101817	B-20(5-6)-101817	B-22(0-1)-100617	B-22(1-3)-100617	B-23(0-1)-100517	B-23(1-3)-100517	B-24(0.5-1.5)-100517
SAMPLE DEPTH (FT BGS)		5-6	0-1	2-4	3.5-4	5-6	0-1	1-3	0-1	1-3	0.5-1.5
COLLECTION DATE:		10/12/2017	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/6/2017	10/6/2017	10/5/2017	10/5/2017	10/5/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	0.85 U	1.1 U	0.97 U	0.93 U	1 UJ	0.88 U	0.81 U	0.83 U	61 U	0.9 R
1,1-DICHLOROETHANE	200	0.9 U	1.1 R	1 U	0.99 U	1.1 UJ	0.93 U	0.86 U	0.88 U	0.91 U	0.95 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5	0.57 U	0.72 R	0.65 UJ	0.62 U	0.5 R	0.59 UJ	0.54 U	0.55 UJ	41 U	0.6 R
1,3-DICHLOROBENZENE	19000	0.63 U	0.8 UJ	0.72 UJ	0.69 U	0.75 UJ	0.65 UJ	0.6 U	0.62 UJ	45 U	0.67 R
2-HEXANONE	200000	1.6 U	2 U	1.8 U	1.7 U	1.9 UJ	1.6 U	1.5 U	1.5 U	110 U	1.7 R
ACETONE	19000	2.6 U	290	33	50	72	2.7 U	28	14	73	2.7 UJ
BENZENE	5	0.89 U	1.1 U	1 U	0.98 U	1.1 UJ	0.92 U	0.85 U	0.87 U	64 U	0.94 R
CARBON DISULFIDE	6000	0.71 U	0.91 U	0.81 U	0.78 U	0.84 U	0.74 U	0.68 U	0.7 U	0.72 UJ	0.75 UJ
CHLOROBENZENE	600	0.88 U	1.1 U	1 U	0.97 U	1 UJ	0.91 U	0.84 U	0.86 U	64 U	0.94 R
CHLOROETHANE	220000	0.61 U	0.78 U	0.7 U	0.67 U	0.72 U	0.63 U	0.58 U	0.6 U	0.62 UJ	0.65 UJ
CHLOROFORM	320	1.1 U	58 J-	1.2 U	1.2 U	42 J-	1.1 U	1 U	1.1 U	1.1 U	1.1 UJ
CIS-1,2-DICHLOROETHYLENE	300	0.81 U	1 U	0.93 U	0.89 U	0.96 U	0.84 U	0.77 U	0.79 U	110 J	0.86 UJ
CYCLOHEXANE	6500000	0.87 U	1.1 U	1 U	0.96 U	1 UJ	0.9 U	0.83 U	0.85 U	63 U	0.92 R
ETHYLBENZENE	5800	0.81 U	1 U	0.93 U	0.89 U	0.96 UJ	0.84 U	0.77 U	0.8 U	59 U	0.86 R
ISOPROPYLBENZENE (CUMENE)	1900000	0.75 U	0.96 U	0.86 U	0.83 U	0.89 UJ	0.78 U	0.72 U	0.74 U	54 U	6.6 J+
M,P-XYLENE	19000	0.71 U	0.91 U	0.81 U	0.78 U	0.84 UJ	0.74 U	0.68 U	0.7 U	51 U	0.75 R
METHYL ACETATE	22000	1.7 U	2.1 U	1.9 U	1.8 U	2 U	1.7 U	1.6 U	1.6 U	1.7 UJ	1.8 UJ
METHYL ETHYL KETONE	900	2.6 U	3.3 U	3 U	2.8 U	3.1 U	2.7 U	2.5 U	2.5 U	52	2.7 UJ
METHYL ISOBUTYL KETONE	33000000	2.2 U	2.8 U	2.5 U	2.4 U	2.6 UJ	2.2 U	2.1 U	2.1 U	9.8 J+	2.3 R
METHYLCYCLOHEXANE	NE	0.78 U	1 U	0.9 U	0.86 U	0.93 UJ	0.81 U	0.75 U	0.77 U	57 U	0.83 R
METHYLENE CHLORIDE	10	9.2 U	*16 B*	*13 B*	0.57 U	0.62 U	*12 B*	*14 B*	*11 B*	9.4 U	7.2 J+
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.72 U	0.92 U	0.82 U	0.79 U	0.85 UJ	0.74 U	0.68 U	0.7 U	52 U	0.76 R
TETRACHLOROETHYLENE (PCE)	5	0.78 U	0.99 U	0.89 U	0.86 U	0.92 UJ	*11 J+*	0.74 U	*20 J+*	*2200*	0.83 R
TOLUENE	7000	0.84 U	1.1 U	0.96 U	0.93 U	1 UJ	6 J+	0.8 U	37 J+	1900	0.89 R
TRANS-1,2-DICHLOROETHENE	600	0.95 U	1.2 U	1.1 U	1 U	1.1 U	0.99 U	0.91 U	0.93 U	0.97 UJ	1 UJ
TRICHLOROETHYLENE (TCE)	10	0.87 U	*35 J*	0.99 U	0.95 U	*12 J+*	0.9 U	0.83 U	7.9 J+	*700*	0.92 R
VINYL CHLORIDE	5	0.71 U	0.91 U	0.81 U	0.78 U	0.84 U	0.74 U	0.68 U	0.7 U	51 U	0.76 UJ

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-2A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-24(1.5-3.5)-100517	DUP-3-100517 B-24(1.5-3.5)	B-25(0.5-1.5)-100517	B-25(5-5.5)-100517	B-26(0.5-1.5)-100517	B-26(5-5.8)-100517	B-27(0.5-1.5)-100517	B-27(5-5.5)-100517
SAMPLE DEPTH (FT BGS)		1.5-3.5	1.5-3.5	0.5-1.5	5-5.5	0.5-1.5	5-5.8	0.5-1.5	5-5.5
COLLECTION DATE:		10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)									
1,1,1-TRICHLOROETHANE (TCA)	300	1 U	1.1 U	0.95 U	0.99 UJ	69 J+	8.3 J+	0.99 U	1 U
1,1-DICHLOROETHANE	200	1.1 U	1.1 U	1 U	1.1 U	1.8 U	1.3 U	1.1 U	1.1 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.67 UJ	0.72 UJ	0.63 UJ	0.66 U	1.1 R	0.82 U	0.66 UJ	0.67 U
1,3-DICHLOROBENZENE	19000	0.75 UJ	0.8 UJ	0.71 UJ	0.74 UJ	1.2 R	0.91 U	0.74 UJ	0.75 U
2-HEXANONE	200000	1.9 U	2 U	1.8 U	1.8 UJ	3.2 UJ	2.3 UJ	1.9 U	1.9 U
ACETONE	19000	36 J	85 J	2.9 U	81	280 J+	67	82	56
BENZENE	5	1.1 U	1.1 U	1 U	1 UJ	1.8 UJ	***16 J+***	***14 J+***	1.1 U
CARBON DISULFIDE	6000	0.85 U	0.9 U	0.8 U	0.83 U	1.4 U	1 U	0.83 U	0.84 U
CHLOROBENZENE	600	1.1 U	1.1 U	0.99 U	1 UJ	1.8 UJ	1.3 UJ	1 U	1 U
CHLOROETHANE	220000	0.73 U	0.77 U	0.69 U	0.72 U	1.2 U	0.89 U	0.72 U	0.73 U
CHLOROFORM	320	1.3 U	1.4 U	1.2 U	1.3 U	2.2 U	1.6 U	1.3 U	1.3 U
CIS-1,2-DICHLOROETHYLENE	300	0.97 U	1 U	0.91 U	0.95 UJ	1.6 U	1.2 U	0.95 U	0.96 U
CYCLOHEXANE	6500000	1 U	1.1 U	0.98 U	27 J+	1.8 UJ	16 J+	1 U	1 U
ETHYLBENZENE	5800	0.97 U	1 U	0.91 U	0.95 UJ	1.6 UJ	1.2 UJ	0.95 U	0.96 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.9 U	0.95 U	0.84 U	5000	1.5 UJ	210 J	0.89 U	6.1
M,P-XYLENE	19000	7.8 J+	8.1 J+	0.8 U	0.83 UJ	9.7 J+	670	7.6 J+	0.84 U
METHYL ACETATE	22000	2 U	2.1 U	1.9 U	2000	3.4 U	8.4	2 U	2 U
METHYL ETHYL KETONE	900	3.1 U	3.3 U	2.9 U	3 U	5.2 U	3.7 U	3 U	3.1 U
METHYL ISOBUTYL KETONE	33000000	2.6 U	2.7 U	2.4 U	2.5 UJ	4.3 UJ	3.1 UJ	2.5 U	2.6 U
METHYLCYCLOHEXANE	NE	0.94 U	0.99 U	0.88 U	3900	1.6 UJ	540	0.92 U	13
METHYLENE CHLORIDE	10	5.9 J	0.66 U	9.2	8.3 J-	***21 BJ+***	13.4 U	10.8 JU	0.62 U
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.86 U	0.91 U	0.8 U	0.84 UJ	1.4 UJ	1 UJ	0.84 U	0.85 U
TETRACHLOROETHYLENE (PCE)	5	0.93 U	0.98 U	0.87 U	0.91 UJ	***7.7 J***	1.1 UJ	0.91 U	0.92 U
TOLUENE	7000	1 U	1.1 U	0.94 U	0.99 UJ	1.7 UJ	220 J	5.3 J	1 U
TRANS-1,2-DICHLOROETHENE	600	1.1 U	1.2 U	1.1 U	1.1 UJ	1.9 U	1.4 U	1.1 U	1.1 U
TRICHLOROETHYLENE (TCE)	10	1 U	1.1 U	0.97 U	1 UJ	***210 J+***	***1600***	1 U	1 U
VINYL CHLORIDE	5	0.85 U	0.9 U	0.8 U	0.83 U	1.4 UJ	1 U	0.84 U	0.84 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-28(0.5-1.5)-100917	B-28(1.5-2.75)-100917	B-29(0-1)-092917	B-29(1-3)-092917	B-30(0-1)-100417	B-30(3-3.8)-100417	B-31(1-2)-101817	B-31(5-5.5)-101817	B-32(1-2)-100417	B-32(2-4)-100417
SAMPLE DEPTH (FT BGS)		0.5-1.5	1.5-2.75	0-1	1-3	0-1	3-3.8	1-2	5-5.5	1-2	2-4
COLLECTION DATE:		10/9/2017	10/9/2017	9/29/2017	9/29/2017	10/4/2017	10/4/2017	10/18/2017	10/18/2017	10/4/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	1.1 U	1.3 U	0.99 U	1 U	1.4 U	1.3 U	1.2 U	1.3 U	1.3 UJ	1.2 UJ
1,1-DICHLOROETHANE	200	1.2 U	1.4 U	1.1 U	1.1 U	1.5 U	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.73 U	0.86 U	0.66 UJ	0.69 UJ	0.96 UJ	0.88 UJ	0.79 UJ	0.87 U	0.88 R	0.81 R
1,3-DICHLOROBENZENE	19000	0.81 U	0.96 U	0.74 UJ	0.77 UJ	1.1 UJ	0.98 UJ	0.88 UJ	0.97 U	0.98 R	0.9 R
2-HEXANONE	200000	2 U	2.4 U	1.8 U	1.9 U	2.7 U	2.5 U	2.2 U	2.4 U	2.5 UJ	2.3 UJ
ACETONE	19000	60	81	3 U	410	4.3 U	40	46	53	29	31
BENZENE	5	1.1 U	1.4 U	1 U	5 J	1.5 U	1.4 U	*24*	*6.6 J*	1.4 UJ	1.3 UJ
CARBON DISULFIDE	6000	0.92 U	1.1 U	0.83 U	0.86 U	1.2 U	1.1 U	0.99 U	1.1 U	1.1 UJ	1 U
CHLOROBENZENE	600	1.1 U	1.3 U	1 U	1.1 U	1.5 U	1.4 U	1.2 U	1.4 U	1.4 UJ	1.3 UJ
CHLOROETHANE	220000	0.79 U	0.93 U	0.72 U	0.74 U	1 U	0.95 U	0.86 U	0.94 U	0.95 U	0.87 U
CHLOROFORM	320	6.0U	7.0U	1.3 U	1.3 U	1.8 U	1.7 U	1.5 U	1.7 U	1.7 U	1.5 U
CIS-1,2-DICHLOROETHYLENE	300	1 U	1.2 U	0.95 U	0.99 U	1.4 U	1.3 U	1.1 U	1.2 U	1.3 U	1.2 U
CYCLOHEXANE	6500000	1.1 U	1.3 U	1 U	1.1 U	1.5 U	1.4 U	1.2 U	1.3 U	1.4 UJ	1.2 UJ
ETHYLBENZENE	5800	1 U	1.2 U	0.95 U	0.99 U	1.4 U	1.3 U	1.1 U	1.3 U	1.3 UJ	1.2 UJ
ISOPROPYLBENZENE (CUMENE)	1900000	0.97 U	23	0.88 U	15 J+	1.3 U	1.2 U	1.1 U	1.2 U	1.2 UJ	1.1 UJ
M,P-XYLENE	19000	0.92 U	1.1 U	0.83 U	15 J+	1.2 U	22	0.99 U	12	1.1 UJ	1 UJ
METHYL ACETATE	22000	2.2 U	2.5 U	2 U	2 U	2.8 U	2.6 U	2.3 U	2.6 U	2.6 U	2.4 U
METHYL ETHYL KETONE	900	3.3 U	3.9 U	3 U	3.1 U	4.4 U	4 U	3.6 U	4 U	4 U	3.7 U
METHYL ISOBUTYL KETONE	33000000	2.8 U	3.3 U	2.5 U	2.6 U	3.7 U	3.3 U	3 U	3.3 U	3.4 UJ	3.1 UJ
METHYLCYCLOHEXANE	NE	1 U	32	0.92 U	61 J+	1.3 U	1.2 U	1.1 U	1.2 U	1.2 UJ	1.1 UJ
METHYLENE CHLORIDE	10	12 U	14 U	*12*	7.7	*17 B*	6.8 J	0.73 U	0.81 U	*15 B*	*20 B*
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.93 U	1.1 U	0.84 U	0.87 U	1.2 U	1.1 U	1 U	1.1 U	1.1 UJ	1 UJ
TETRACHLOROETHYLENE (PCE)	5	1 U	1.2 U	0.91 U	4.7 J	1.3 U	*5.8 J*	1.1 U	1.2 U	1.2 UJ	1.1 UJ
TOLUENE	7000	1.1 U	1.3 U	0.99 U	5.2 J	1.4 U	15	38	41	1.3 UJ	9.3 J
TRANS-1,2-DICHLOROETHENE	600	1.2 U	1.4 U	1.1 U	1.2 U	1.6 U	1.5 U	1.3 U	1.5 U	1.5 U	1.4 U
TRICHLOROETHYLENE (TCE)	10	1.1 U	1.3 U	1 U	1.1 U	1.5 U	1.3 U	1.2 U	1.3 U	1.4 UJ	1.2 UJ
VINYL CHLORIDE	5	0.92 U	1.1 U	0.83 U	0.87 U	1.2 U	1.1 U	1 U	1.1 U	1.1 U	1 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-33(0.5-1.5)-100417	B-33(3.5-4.5)-100417	B-34(0-1)-100617	B-34(5-5.5)-100617	B-35(1-2)-100417	B-35(2-3.8)-100417	B-36(0-1)-100417	B-36(3-3.7)-100417	B-37(0-1)-100417
SAMPLE DEPTH (FT BGS)		0.5-1.5	3.5-4.5	0-1	5-5.5	1-2	2-3.8	0-1	3-3.7	0-1
COLLECTION DATE:		10/4/2017	10/4/2017	10/6/2017	10/6/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)										
1,1,1-TRICHLOROETHANE (TCA)	300	0.84 U	1.1 U	0.99 U	470 U	1.6 U	81 U	0.79 UJ	92 U	0.92 UJ
1,1-DICHLOROETHANE	200	46 U	1.1 U	1.1 U	500 U	68 U	86 U	0.84 U	98 U	0.97 U
1,2-DIBROMO-3-CHLOROPROPANE	5	29 U	0.71 UJ	0.66 UJ	320 U	43 U	54 U	0.53 U	62 U	0.61 R
1,3-DICHLOROBENZENE	19000	0.62 UJ	0.79 UJ	0.74 UJ	350 U	1.2 U	60 U	0.59 U	69 U	0.68 R
2-HEXANONE	200000	26 J-	2 U	1.8 U	880 U	2.9 U	150 U	1.5 U	170 U	1.7 UJ
ACETONE	19000	6400	150 J-	390 J	1400 U	220	240 U	6.6 J	280 U	110
BENZENE	5	0.88 U	***6 J+***	***170 J***	500 U	***16000 D***	***7900 D***	0.83 U	97 U	***8.4 J+***
CARBON DISULFIDE	6000	0.7 U	0.89 U	0.83 U	400 U	1.3 U	68 U	0.66 U	77 UJ	0.77 U
CHLOROBENZENE	600	0.87 U	1.1 U	1 U	490 U	1.6 U	84 U	0.82 U	96 U	0.96 UJ
CHLOROETHANE	220000	0.61 U	0.77 U	0.72 U	340 U	1.1 U	59 U	0.57 U	67 UJ	0.66 U
CHLOROFORM	320	36 J-	1.3 U	1.3 U	600 U	68 J-	100 U	1 U	120 U	1.2 U
CIS-1,2-DICHLOROETHYLENE	300	0.8 U	1 U	0.95 U	450 UJ	1.5 U	78 U	0.76 UJ	88 U	0.88 U
CYCLOHEXANE	6500000	0.86 U	1.1 U	1 U	490 U	1.6 U	1200	0.81 UJ	880	0.94 UJ
ETHYLBENZENE	5800	330	6.1 J+	5400	***12000***	2600	3900 J	0.76 U	360 J	0.88 UJ
ISOPROPYLBENZENE (CUMENE)	1900000	0.75 U	0.95 U	550	5100	2100	56000 D	0.7 U	29000 D	0.82 UJ
M,P-XYLENE	19000	130 J	8.5 J+	8000	***87000***	4500 D	***50000 D***	0.66 U	77 U	17 J+
METHYL ACETATE	22000	15000 J	2.1 U	2 U	930 U	4500 D	260 J	1.6 UJ	180 U	1.8 U
METHYL ETHYL KETONE	900	55 J-	3.2 UJ	3 U	1400 U	4.8 U	250 U	2.4 U	280 U	2.8 U
METHYL ISOBUTYL KETONE	33000000	110 U	2.7 U	2.5 U	1200 U	4 U	210 U	2 U	240 U	2.3 UJ
METHYLCYCLOHEXANE	NE	0.78 U	0.98 U	1300	8000	1100 J-	40000 D	0.73 UJ	79000 D	0.85 UJ
METHYLENE CHLORIDE	10	6.1	0.65 U	***260 J***	290 U	7.3 J	***110 J***	8.6 JU	57 U	***11***
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.71 U	8.6 J+	960	5700	260 J	4700 D	0.67 U	78 U	7.3 J+
TETRACHLOROETHYLENE (PCE)	5	0.77 U	5 J	0.91 U	430 U	1.4 U	74 U	0.73 U	85 U	0.84 UJ
TOLUENE	7000	120 J	7 J+	470	470 U	830 J	210 J	0.79 U	220 J	51 J+
TRANS-1,2-DICHLOROETHENE	600	0.94 U	1.2 U	1.1 U	530 UJ	1.8 U	91 U	0.89 UJ	100 U	1 U
TRICHLOROETHYLENE (TCE)	10	***37***	1.1 U	1 U	480 U	***36***	83 U	0.81 U	94 U	0.94 UJ
VINYL CHLORIDE	5	0.7 U	0.89 U	0.83 U	400 U	1.3 U	68 U	0.67 U	78 U	0.77 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-37(1-3)-100417	B-38(0-1)-100917	DUP-4-101017 B-38(0-1)	B-38(1-3)-100917	B-38(FILL)-100917	B-39(0.5-1.5)-100317	B-39(5-7)-100317	B-40(0-1)-092617	B-40(5-7)-092717	B-41(0-1)-092617
SAMPLE DEPTH (FT BGS)		1-3	0-1	0-1	1-3	-3-0	0.5-1.5	5-7	0-1	5-7	0-1
COLLECTION DATE:		10/4/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/3/2017	10/3/2017	9/26/2017	9/27/2017	9/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	0.89 UJ	50 U	48 U	0.91 U	1 U	0.89 U	1.1 U	1.2 U	1.1 UJ	0.96 UJ
1,1-DICHLOROETHANE	200	0.95 U	54 U	51 U	0.97 U	1.1 U	0.94 U	1.1 UJ	1.3 U	1.2 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.6 R	34 U	32 U	0.61 UJ	0.67 UJ	0.59 UJ	0.7 R	0.8 UJ	0.75 U	0.64 UJ
1,3-DICHLOROBENZENE	19000	0.66 R	38 U	36 U	0.68 U	0.74 UJ	0.66 UJ	0.78 U	5.6 J	0.83 U	3.2 J
2-HEXANONE	200000	1.7 UJ	94 U	89 U	1.7 U	1.9 U	1.7 U	2 U	2.2 U	2.1 U	1.8 U
ACETONE	19000	61	150 J	140 U	29	3 U	2.7 U	21	81	24U	2.9 U
BENZENE	5	0.94 UJ	53 U	50 U	0.96 U	1 U	0.93 U	1.1 U	1.3 U	1.2 U	1 U
CARBON DISULFIDE	6000	0.75 U	42 U	40 UJ	0.77 U	0.84 U	0.75 U	0.88 U	1 U	0.94 U	0.8 U
CHLOROBENZENE	600	0.93 UJ	53 U	50 U	0.95 U	1 U	0.93 U	1.1 U	39	6.1	1 U
CHLOROETHANE	220000	0.64 U	36 U	35 UJ	0.66 U	0.72 U	0.64 U	0.76 U	0.86 U	0.81 U	0.69 U
CHLOROFORM	320	1.1 U	64 U	61 U	18	1.3 U	1.1 U	49 J-	1.5 U	1.4 U	1.2 U
CIS-1,2-DICHLOROETHYLENE	300	0.85 U	48 U	46 U	0.87 U	0.95 U	0.85 U	1 U	1.1 U	1.1 U	0.92 U
CYCLOHEXANE	6500000	0.92 UJ	720 J	650	0.94 U	1 U	0.91 U	1.1 U	1.2 U	1.2 U	0.98 U
ETHYLBENZENE	5800	0.86 UJ	400	46 U	7.4	0.96 U	0.85 U	1 U	1.1 U	1.1 U	0.92 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.79 UJ	15000 D	16000 D	3500	0.89 U	0.79 U	0.94 U	1.1 U	1 U	0.85 U
M,P-XYLENE	19000	0.75 UJ	1100 J	40 UJ	10	0.84 U	0.75 U	0.88 U	1 U	0.94 U	0.8 U
METHYL ACETATE	22000	1.8 U	2200 J	1200 J	1.8 U	2 U	1.8 U	2.1 U	28	2.2 UJ	1.9 UJ
METHYL ETHYL KETONE	900	2.7 U	150 U	150 U	2.8 U	3 U	2.7 U	3.2 U	6.8 J	3.4 U	2.9 U
METHYL ISOBUTYL KETONE	33000000	2.3 UJ	130 U	120 U	2.3 U	2.5 U	2.3 U	2.7 U	3 U	2.9 U	2.4 U
METHYLCYCLOHEXANE	NE	0.83 UJ	28000 D	28000 D	6400	0.92 U	0.82 U	0.98 U	1.1 U	1 U	0.89 U
METHYLENE CHLORIDE	10	7.2	560 U	520 U	10 U	11 U	0.55 U	11.6 U	*16*	12.2 JU	*12 J-*
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.76 UJ	43 U	41 U	0.77 U	0.84 U	0.75 U	0.89 U	1 U	0.95 U	0.81 U
TETRACHLOROETHYLENE (PCE)	5	0.82 UJ	46 U	44 U	0.84 U	0.92 U	0.82 U	0.97 U	1.1 U	1 U	0.88 U
TOLUENE	7000	0.89 UJ	50 U	48 U	0.91 U	0.99 U	0.89 U	1 U	1.2 U	1.1 U	0.95 U
TRANS-1,2-DICHLOROETHENE	600	1 U	57 U	54 U	1 U	1.1 U	1 U	1.2 U	1.3 U	1.3 U	1.1 U
TRICHLOROETHYLENE (TCE)	10	0.91 UJ	52 U	49 U	0.93 U	1 U	0.91 U	7.6	1.2 U	1.1 U	0.98 U
VINYL CHLORIDE	5	0.75 U	42 U	40 U	0.77 U	0.84 U	0.75 U	0.89 U	1 U	0.94 U	0.8 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-41(5-7)-092717	B-42(0.3-1.3)-100217	B-42(7-9)-100217	B-43(0-1)-092617	B-43(5-7)-092617	B-44(0-1)-100217	B-44(5-5.5)-100217	B-51(1-2)-092817	B-51(5-7)-092817	B-52(0-1)-102317
SAMPLE DEPTH (FT BGS)		5-7	0.3-1.3	7-9	0-1	5-7	0-1	5-5.5	1-2	5-7	0-1
COLLECTION DATE:		9/27/2017	10/2/2017	10/2/2017	9/26/2017	9/26/2017	10/2/2017	10/2/2017	9/28/2017	9/28/2017	10/23/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	0.77 U	0.97 U	1.4 U	0.71 UJ	0.85 U	0.86 U	1 U	0.76 UJ	1.1 U	1 U
1,1-DICHLOROETHANE	200	0.82 U	1 U	1.5 U	0.76 U	0.9 U	0.91 U	1.1 U	0.81 U	1.1 R	1.1 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.52 UJ	0.65 U	0.92 U	0.48 U	0.57 U	0.58 U	0.67 U	0.51 UJ	0.72 R	0.7 UJ
1,3-DICHLOROBENZENE	19000	0.58 UJ	0.72 U	1 U	0.53 U	0.63 U	0.64 U	0.74 UJ	0.57 UJ	0.8 U	0.78 UJ
2-HEXANONE	200000	1.4 U	1.8 U	2.6 U	1.3 U	1.6 U	1.6 U	1.9 U	1.4 UJ	2 U	410 J
ACETONE	19000	2.3 U	1200	90	16	45	16	44	44	65	960
BENZENE	5	0.81 U	1 U	1.4 U	0.75 U	0.89 U	0.9 U	*7.9 J+*	0.8 UJ	1.1 U	1.1 U
CARBON DISULFIDE	6000	0.65 U	0.81 U	1.2 U	0.6 U	0.71 U	0.72 U	0.84 U	0.64 U	0.9 U	0.88 U
CHLOROBENZENE	600	0.81 U	1 U	1.4 U	0.74 U	0.89 U	0.9 U	1 UJ	0.79 UJ	1.1 U	1.1 U
CHLOROETHANE	220000	0.56 U	0.7 U	0.99 U	0.52 U	0.62 U	0.62 U	0.72 U	0.55 U	0.78 U	0.76 U
CHLOROFORM	320	0.98 U	1.2 U	1.7 U	0.91 U	1.1 U	1.1 U	1.3 U	0.96 U	55 J-	1.3 U
CIS-1,2-DICHLOROETHYLENE	300	0.74 U	0.93 U	1.3 U	0.68 UJ	0.82 U	0.82 U	0.95 U	0.73 U	1 U	1 U
CYCLOHEXANE	6500000	0.8 U	0.99 U	1.4 U	0.74 U	0.88 U	0.89 U	8.2 J+	0.78 UJ	1.1 U	2600
ETHYLBENZENE	5800	0.74 U	0.93 U	1.3 U	0.69 U	0.82 U	0.83 U	110 J+	0.73 UJ	1 U	2300
ISOPROPYLBENZENE (CUMENE)	1900000	0.69 U	0.86 U	6.6 J	0.64 U	5.2	0.77 U	560 E	0.68 UJ	0.96 U	830
M,P-XYLENE	19000	0.65 U	0.81 U	1.2 U	0.6 U	4.2 J	0.72 U	1100 J	0.64 UJ	15	9200
METHYL ACETATE	22000	1.5 U	1.9 U	2.7 U	1.4 UJ	1.7 U	1.7 U	2 U	1.5 U	2.1 U	2.1 U
METHYL ETHYL KETONE	900	2.4 U	2.9 U	28	2.2 U	7.4 J	2.6 U	3 U	2.3 U	11 J	3.2 U
METHYL ISOBUTYL KETONE	33000000	2 U	2.5 U	3.5 U	1.8 U	2.2 U	2.2 U	2.5 U	1.9 UJ	2.7 U	360 J
METHYLCYCLOHEXANE	NE	0.72 U	0.9 U	1.3 U	0.66 U	3.8 J	0.8 U	350 J	0.71 UJ	1 U	0.97 U
METHYLENE CHLORIDE	10	8.4U	*19 *J*	0.85 U	4.2 J-	9.4 U	*17 *J*	10.8 U	9.7 *J	0.66 U	11.4U
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.66 U	0.82 U	1.2 U	0.61 U	0.72 U	0.73 U	530 J	0.64 UJ	7	1300
TETRACHLOROETHYLENE (PCE)	5	0.71 U	0.89 U	1.3 U	0.66 U	0.78 U	0.79 U	0.92 U	0.7 UJ	0.99 U	0.97 U
TOLUENE	7000	8.4	0.96 U	1.4 U	0.71 U	7.5	0.86 U	29 J+	0.76 UJ	1.1 U	2100
TRANS-1,2-DICHLOROETHENE	600	0.87 U	1.1 U	1.5 U	0.8 UJ	0.96 U	0.97 U	1.1 U	0.85 U	1.2 U	1.2 U
TRICHLOROETHYLENE (TCE)	10	0.79 U	0.99 U	1.4 U	0.73 U	0.87 U	0.88 U	1 U	0.78 UJ	*28*	1.1 U
VINYL CHLORIDE	5	0.65 U	0.81 U	1.2 U	0.6 UJ	0.72 U	0.72 U	0.84 U	0.64 U	0.91 U	0.88 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-52(1-3)-102317	B-53(0-1)-092817	B-53(1-3)-092817	B-54(1-2)-092817	B-54(7-8)-092817	B-55(0.5-1.5)-100317	B-55(3.5-5)-100317	B-56(1-2)-092717	B-56(2-4)-092717	B-57(1-2)-100317
SAMPLE DEPTH (FT BGS)		1-3	0-1	1-3	1-2	7-8	0.5-1.5	3.5-5	1-2	2-4	1-2
COLLECTION DATE:		10/23/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	10/3/2017	10/3/2017	9/27/2017	9/27/2017	10/3/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	1.4 UJ	1 UJ	1.1 U	0.82 U	1.7 U	100 J+	1 U	20 J+	*1200*	0.89 U
1,1-DICHLOROETHANE	200	1.5 U	1.1 U	1.1 U	0.88 U	1.8 U	16 J+	1.1 U	9.7	*1000*	0.94 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.94 U	0.69 U	0.72 U	0.55 U	1.1 UJ	0.59 R	0.68 U	0.7 R	40 U	0.59 UJ
1,3-DICHLOROBENZENE	19000	1 UJ	0.76 U	0.8 U	0.61 U	1.3 UJ	0.66 R	0.75 U	0.78 R	45 U	0.66 UJ
2-HEXANONE	200000	2.6 U	1.9 U	2 U	1.5 U	3.2 U	1.7 R	1.9 U	2 UJ	1.7 U	1.7 U
ACETONE	19000	21	16	3.2 U	48	210	120 J+	130	69	410 J	51
BENZENE	5	1.5 U	1.1 U	1.1 U	0.87 U	1.8 U	0.93 R	1.1 U	1.1 UJ	0.97 U	0.93 U
CARBON DISULFIDE	6000	1.2 U	0.86 U	0.9 U	0.69 U	13	0.75 UJ	0.85 U	0.88 U	0.78 U	0.75 U
CHLOROBENZENE	600	1.5 UJ	1.1 U	1.1 U	0.86 U	1.8 U	0.93 R	1.1 U	1.1 UJ	0.96 U	0.93 U
CHLOROETHANE	220000	1 U	0.74 U	0.77 U	0.6 U	1.2 U	0.64 UJ	0.73 U	0.76 U	5.4	0.64 U
CHLOROFORM	320	1.8 U	1.3 U	1.4 U	1 U	2.2 U	1.1 UJ	1.3 U	1.3 U	1.2 U	1.1 U
CIS-1,2-DICHLOROETHYLENE	300	1.3 UJ	0.98 U	1 U	0.79 U	1.6 U	0.85 UJ	0.97 U	87	*5000*	0.88 U
CYCLOHEXANE	6500000	1.4 U	1.1 U	1.1 U	0.85 U	1.7 U	0.91 R	1 U	1.1 UJ	0.95 U	0.91 U
ETHYLBENZENE	5800	1.3 U	0.99 U	1 U	0.79 U	1.6 U	0.85 R	0.97 U	1 UJ	860	0.85 U
ISOPROPYLBENZENE (CUMENE)	1900000	1.3 U	0.91 U	0.95 U	0.73 U	1.5 U	0.79 R	0.9 U	0.93 UJ	0.82 U	0.79 U
M,P-XYLENE	19000	1.2 U	0.86 U	0.9 U	0.69 U	1.4 U	0.75 R	0.85 U	8.2 J+	3900	0.75 U
METHYL ACETATE	22000	2.8 UJ	2 UJ	2.1 U	1.6 U	3.3 U	1.8 UJ	2 U	2.1 U	1.8 U	1.8 U
METHYL ETHYL KETONE	900	4.3 U	3.1 U	3.3 U	12	69	2.7 UJ	32	5.9 J	2.8 U	2.7 U
METHYL ISOBUTYL KETONE	33000000	3.6 U	2.6 U	2.7 U	2.1 U	4.3 U	2.3 R	2.6 U	2.7 UJ	160 J	2.3 U
METHYLCYCLOHEXANE	NE	1.3 U	0.95 U	0.99 U	0.76 U	1.6 U	0.82 R	0.94 U	0.97 UJ	0.86 U	0.82 U
METHYLENE CHLORIDE	10	15.4U	*30 BJ-*	0.66 U	0.51 UJ	*55 B*	*12 BJ+*	0.62 U	*16 B*	0.57 UJ	4.3 J
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	1.2 U	0.87 U	0.91 U	0.7 U	1.4 U	0.75 R	0.86 U	0.89 UJ	740	0.75 U
TETRACHLOROETHYLENE (PCE)	5	1.3 U	0.94 U	0.98 U	0.76 U	1.6 U	0.82 R	0.93 U	*14 J+*	*3700*	0.82 U
TOLUENE	7000	1.4 U	1 U	1.1 U	0.82 U	1.7 U	0.88 R	1 U	12 J+	1500	5.1 J+
TRANS-1,2-DICHLOROETHENE	600	1.6 UJ	1.2 U	1.2 U	0.93 U	1.9 U	1 UJ	1.1 U	8.5	*970*	1 U
TRICHLOROETHYLENE (TCE)	10	1.4 U	1.1 U	1.1 U	0.84 U	1.7 U	*12 J+*	1 U	*38 J+*	*5400*	0.91 U
VINYL CHLORIDE	5	1.2 U	0.86 U	0.9 U	0.69 U	1.4 U	0.75 UJ	0.85 U	*100*	*2900*	0.75 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-57(2-4)-100317	B-58(1-2)-092717	B-58(6-8)-092717	B-59(FILL)-100317	B-59(5-7)-100317	DUP-2-100317 B-59(5-7)	B-59(12-13.5)-100317	B-60(0-1)-092617	B-60(5-7)-092617
SAMPLE DEPTH (FT BGS)		2-4	1-2	6-8	-3-0	5-7	5-7	12-13.5	0-1	5-7
COLLECTION DATE:		10/3/2017	9/27/2017	9/27/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	9/26/2017	9/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)										
1,1,1-TRICHLOROETHANE (TCA)	300	1.4 U	66 U	0.78 U	0.86 U	1.1 U	1.1 U	0.84 U	0.79 UJ	0.92 U
1,1-DICHLOROETHANE	200	1.5 U	1.1 UJ	0.83 U	0.92 U	1.1 U	1.2 U	0.89 U	0.84 U	0.98 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.93 U	44 U	0.52 U	0.58 U	0.71 U	0.73 UJ	0.56 U	0.53 U	0.62 UJ
1,3-DICHLOROBENZENE	19000	1 U	49 U	0.58 U	0.64 U	0.79 U	0.82 UJ	0.63 U	0.59 U	0.69 UJ
2-HEXANONE	200000	2.6 U	120 U	1.5 U	1.6 U	2 U	2 U	1.6 U	1.5 U	1.7 U
ACETONE	19000	59	62 J+	18	2.6 U	14	3.3 U	2.5 U	2.4 U	8.4 J
BENZENE	5	1.5 U	*180 J*	0.82 U	0.91 U	1.1 U	1.2 U	0.88 U	0.83 U	0.97 U
CARBON DISULFIDE	6000	1.2 U	0.87 UJ	0.66 U	0.73 U	0.89 U	0.92 U	0.71 U	0.67 U	0.77 U
CHLOROBENZENE	600	1.4 U	69 U	0.82 U	0.9 U	1.1 U	1.1 U	0.88 U	0.83 U	0.96 U
CHLOROETHANE	220000	1 U	0.75 UJ	0.57 U	0.63 U	0.77 U	0.79 U	0.61 U	0.57 U	0.67 U
CHLOROFORM	320	1.8 U	1.3 UJ	0.99 U	1.1 U	1.3 U	1.4 U	1.1 U	1 U	1.2 U
CIS-1,2-DICHLOROETHYLENE	300	1.3 U	1 UJ	0.75 U	0.83 U	1 U	1 U	0.81 U	0.76 U	0.88 U
CYCLOHEXANE	6500000	1.4 U	68 U	0.81 U	0.89 U	1.1 U	1.1 U	0.87 U	0.82 U	0.95 U
ETHYLBENZENE	5800	1.3 U	*15000 D*	0.75 U	0.83 U	1 U	1.1 U	0.81 U	0.76 U	0.88 U
ISOPROPYLBENZENE (CUMENE)	1900000	1.2 U	1100	0.7 U	0.77 U	0.94 U	0.98 U	0.75 U	0.71 U	0.82 U
M,P-XYLENE	19000	1.2 U	*66000 D*	0.66 U	0.73 U	0.89 U	0.92 U	0.71 U	0.67 U	0.77 U
METHYL ACETATE	22000	2.7 U	2.1 UJ	1.5 U	1.7 U	2.1 U	2.2 U	1.7 U	1.6 UJ	1.8 U
METHYL ETHYL KETONE	900	4.2 U	3.2 UJ	2.4 U	2.6 U	3.2 U	3.3 U	2.6 U	2.4 U	2.8 U
METHYL ISOBUTYL KETONE	33000000	3.5 U	170 U	2 U	2.2 U	2.7 U	2.8 U	2.1 U	2 U	2.3 U
METHYLCYCLOHEXANE	NE	1.3 U	61 U	0.73 U	0.8 U	0.98 U	1 U	0.78 U	0.74 U	0.85 U
METHYLENE CHLORIDE	10	0.86 U	0.64 UJ	0.48 U	9.4 U	0.65 U	5.6 J	0.52 U	8.6 J-	*13*
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	1.2 U	13000 D	0.66 U	0.73 U	0.9 U	0.93 U	0.71 U	0.67 U	0.78 U
TETRACHLOROETHYLENE (PCE)	5	1.3 U	*2900*	0.72 U	0.8 U	0.97 U	1 U	0.77 U	0.73 U	0.85 U
TOLUENE	7000	1.4 U	1100	0.78 U	0.86 U	1.1 U	1.1 U	0.84 U	0.79 U	0.92 U
TRANS-1,2-DICHLOROETHENE	600	1.6 U	1.2 UJ	0.88 U	0.97 U	1.2 U	1.2 U	0.95 U	0.89 U	1 U
TRICHLOROETHYLENE (TCE)	10	1.4 U	68 U	0.8 U	0.88 U	1.1 U	1.1 U	0.86 U	0.81 U	0.94 U
VINYL CHLORIDE	5	1.2 U	0.88 UJ	0.66 U	0.73 U	0.89 U	0.92 U	0.71 U	0.67 U	0.77 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2-5A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-60(FILL)-092617	B-61(0-1)-101117	B-61(5-6)-101117	B-62(0-1)-101117	B-62(5-5.5)-101117	B-63(0-1)-101117	B-63(1-3)-101117	B-64(1.5-2.5)-101117	DUP-5-101117 B-64(1.5-2.5)
SAMPLE DEPTH (FT BGS)		-4-0	0-1	5-6	0-1	5-5.5	0-1	1-3	1.5-2.5	1.5-2.5
COLLECTION DATE:		9/26/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/201
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)										
1,1,1-TRICHLOROETHANE (TCA)	300	0.79 U	0.96 U	0.81 U	0.9 U	1.3 U	32	10	0.96 U	0.9 U
1,1-DICHLOROETHANE	200	0.84 U	1 U	0.86 U	0.95 U	1.4 U	1.3 U	0.91 U	1 U	0.96 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.53 UJ	0.64 UJ	0.54 U	0.6 U	0.88 UJ	0.79 U	0.57 U	0.64 R	0.6 R
1,3-DICHLOROBENZENE	19000	0.59 UJ	0.72 UJ	0.6 U	0.67 U	0.97 UJ	0.88 U	0.64 U	0.72 R	0.67 R
2-HEXANONE	200000	1.5 U	1.8 U	1.5 U	1.7 U	2.4 U	2.2 U	1.6 U	1.8 U	1.7 U
ACETONE	19000	19	2.9 U	2.4 U	29	4 U	39	24	60	47
BENZENE	5	0.83 U	1 U	0.85 U	0.94 U	1.4 U	1.2 U	0.9 U	1 U	0.95 U
CARBON DISULFIDE	6000	0.66 U	0.81 U	0.68 U	0.75 U	1.1 U	0.99 U	0.72 U	0.81 U	0.76 U
CHLOROBENZENE	600	0.82 U	1 U	0.84 U	0.94 U	1.4 U	1.2 U	0.89 U	1 U	0.94 U
CHLOROETHANE	220000	0.57 U	0.7 U	0.59 U	0.65 U	0.95 U	0.85 U	0.62 U	0.7 U	0.65 U
CHLOROFORM	320	1 U	1.2 U	1 U	1.1 U	1.7 U	1.5 U	1.1 U	1.2 U	1.1 U
CIS-1,2-DICHLOROETHYLENE	300	0.76 U	0.92 U	0.78 U	0.86 U	1.3 U	1.1 U	0.82 U	0.92 U	0.86 U
CYCLOHEXANE	6500000	0.81 U	0.99 U	0.83 U	0.92 U	1.3 U	1.2 U	0.88 U	0.99 U	0.93 U
ETHYLBENZENE	5800	0.76 U	0.92 U	0.78 U	0.86 U	1.3 U	1.1 U	0.82 U	0.92 U	0.87 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.7 U	0.86 U	0.72 U	0.8 U	1.2 U	1.1 U	0.76 U	0.86 U	0.8 U
M,P-XYLENE	19000	0.66 U	0.81 U	0.68 U	0.75 U	1.1 U	7.4	0.72 U	0.81 U	0.76 U
METHYL ACETATE	22000	1.6 U	1.9 U	1.6 U	1.8 U	2.6 U	2.3 U	1.7 U	1.9 U	1.8 U
METHYL ETHYL KETONE	900	2.4 U	2.9 U	2.5 U	2.7 U	4 U	3.6 U	2.6 U	2.9 U	2.8 U
METHYL ISOBUTYL KETONE	33000000	2 U	2.5 U	2.1 U	2.3 U	3.3 U	3 U	2.2 U	2.5 U	2.3 U
METHYLCYCLOHEXANE	NE	0.73 U	0.89 U	0.75 U	0.83 U	1.2 U	1.1 U	0.79 U	0.89 U	0.84 U
METHYLENE CHLORIDE	10	10	0.59 U	9.2 B	9.8 U	*37 BJ+*	13 U	10 B	*13 B*	*11 B*
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.67 U	0.82 U	0.69 U	0.76 U	1.1 U	1 U	0.72 U	0.82 U	0.76 U
TETRACHLOROETHYLENE (PCE)	5	0.73 U	0.89 U	0.75 U	0.83 U	1.2 U	1.1 U	0.79 U	0.88 U	0.83 U
TOLUENE	7000	0.79 U	14 J+	0.81 U	3.9 J	85 J+	1.2 U	0.85 U	10 J+	7.8
TRANS-1,2-DICHLOROETHENE	600	0.89 U	1.1 U	0.91 U	1 U	1.5 U	1.3 U	0.96 U	1.1 U	1 U
TRICHLOROETHYLENE (TCE)	10	0.81 U	0.99 U	0.83 U	0.92 U	1.3 U	1.2 U	0.87 U	0.98 U	0.92 U
VINYL CHLORIDE	5	0.66 U	0.81 U	0.68 U	0.76 U	1.1 U	0.99 U	0.72 U	0.81 U	0.76 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-64(2.5-4.5)-101117	B-65(0.5-1.5)-101317	B-65(1.5-2.7)-101317	B-66(1.5-2.5)-101017	B-66(2.5-4.5)-101017	B-67(1.5-2.5)-101017	B-67(2.5-3.8)-101017	B-68(1-2)-102417	B-69(0-1)-092717
SAMPLE DEPTH (FT BGS)		2.5-4.5	0.5-1.5	1.5-2.7	1.5-2.5	2.5-4.5	1.5-2.5	2.5-3.8	1-2	0-1
COLLECTION DATE:		10/11/2017	10/13/2017	10/13/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/24/2017	9/27/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)										
1,1,1-TRICHLOROETHANE (TCA)	300	1 UJ	1 U	0.97 U	1 U	1.2 UJ	1 U	71 U	1.4 U	0.78 U
1,1-DICHLOROETHANE	200	1.1 U	1.1 R	1 U	1.1 R	1.2 UJ	1.1 R	75 U	1.5 U	0.83 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.7 R	0.7 R	0.65 U	0.67 R	0.78 R	0.69 R	47 U	0.95 U	0.58 UJ
1,3-DICHLOROBENZENE	19000	0.78 R	0.78 UJ	0.72 U	0.75 UJ	0.86 R	0.77 U	53 U	1.1 U	0.65 UJ
2-HEXANONE	200000	1.9 UJ	2 U	1.8 U	2 UJ	2.3 UJ	1.9 UJ	130 U	2.6 U	1.5 U
ACETONE	19000	52 J+	2700 J	23	110 J-	91 J+	77	750 J	270	17.2 U
BENZENE	5	1.1 UJ	1.1 U	1 U	1.1 U	***9.6 J+***	1.1 U	***130 J***	1.5 U	0.82 U
CARBON DISULFIDE	6000	0.88 U	0.88 U	0.81 U	0.85 U	0.97 UJ	0.86 U	59 U	1.2 U	0.66 U
CHLOROBENZENE	600	1.1 UJ	1.1 U	1 U	1.1 U	1.3 UJ	1.1 U	73 U	1.5 U	0.82 U
CHLOROETHANE	220000	0.75 U	0.76 U	0.7 U	0.73 U	0.84 UJ	0.74 U	51 U	1 U	0.57 U
CHLOROFORM	320	1.3 U	51 J-	1.2 U	50 J-	1.5 UJ	40 J-	89 U	1.8 U	1 U
CIS-1,2-DICHLOROETHYLENE	300	1 U	1 U	0.93 U	0.96 U	1.1 UJ	0.99 U	68 U	1.4 U	0.75 U
CYCLOHEXANE	6500000	1.1 UJ	1.1 U	1 U	1 U	1.3 UJ	1.1 U	73 U	1.5 U	0.81 U
ETHYLBENZENE	5800	1 UJ	1 U	0.93 U	0.97 U	1.2 UJ	0.99 U	1200	1.4 U	0.75 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.93 UJ	0.93 U	0.86 U	0.9 U	1.1 UJ	0.92 U	310 J	1.3 U	0.7 U
M,P-XYLENE	19000	0.88 UJ	430 J	0.81 U	0.85 U	25 J+	0.86 U	12000	1.2 U	0.66 U
METHYL ACETATE	22000	2.1 U	***44000 J***	1.9 U	2 U	2.3 UJ	2 U	260 J	2.8 U	1.5 U
METHYL ETHYL KETONE	900	3.2 U	3.2 U	3 U	3.1 UJ	3.5 UJ	3.1 U	220 U	4.3 U	2.4 U
METHYL ISOBUTYL KETONE	33000000	2.7 UJ	2.7 U	2.5 U	2.7 UJ	3.2 UJ	2.6 UJ	180 U	3.6 U	2 U
METHYLCYCLOHEXANE	NE	0.97 UJ	0.97 U	0.9 U	0.93 U	1.2 UJ	0.95 U	65 U	1.3 U	0.73 U
METHYLENE CHLORIDE	10	***21 BJ+***	6.3	5.3	11 U	13 U	11 U	43 U	15.4U	9.9
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.88 UJ	140 J	0.82 U	0.85 U	6.1 J	0.87 U	940	1.2 U	0.67 U
TETRACHLOROETHYLENE (PCE)	5	0.96 UJ	0.96 U	0.89 U	0.93 U	1.1 UJ	0.95 U	65 U	***40***	0.72 U
TOLUENE	7000	48 J+	490 J	0.97 U	15	130 J+	5 J	3700	1.4 U	0.78 U
TRANS-1,2-DICHLOROETHENE	600	1.2 U	1.2 U	1.1 U	1.1 U	1.3 UJ	1.2 U	79 U	1.6 U	0.88 U
TRICHLOROETHYLENE (TCE)	10	1.1 UJ	***20***	0.99 U	***37***	1.3 UJ	***26***	72 U	***24***	0.8 U
VINYL CHLORIDE	5	0.88 U	0.88 U	0.82 U	0.85 U	0.98 UJ	0.87 U	59 U	1.2 U	0.66 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		B-69(1-3)-092717	B-70(0-1)-092717	B-70(5-7)-092717	B-71(3-5)-101617	B-74(0-1)-100417	B-74(3-4)-100417	B-75(0-1)-092917	B-75(1-3)-092917	B-76(0-1)-102317	B-76(1-3)-102317
SAMPLE DEPTH (FT BGS)		1-3	0-1	5-7	3-5	0-1	3-4	0-1	1-3	0-1	1-3
COLLECTION DATE:		9/27/2017	9/27/2017	9/27/2017	10/16/2017	10/4/2017	10/4/2017	9/29/2017	9/29/2017	10/23/2017	10/23/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	0.76 UJ	0.92 UJ	0.93 U	0.78 U	0.73 U	72 U	0.81 U	88 U	1.1 U	0.95 U
1,1-DICHLOROETHANE	200	0.81 U	0.97 U	0.98 U	0.83 U	0.78 U	76 U	0.86 U	94 U	1.2 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.51 R	0.61 U	0.62 U	0.52 U	3.2 J	48 U	0.55 U	59 U	0.77 U	0.64 U
1,3-DICHLOROBENZENE	19000	0.57 R	0.68 U	0.69 UJ	0.58 UJ	0.55 UJ	54 U	0.61 U	66 U	0.86 U	0.71 U
2-HEXANONE	200000	1.4 UJ	1.7 U	1.7 U	1.5 U	1.4 U	130 U	1.5 U	170 U	2.1 U	1.8 U
ACETONE	19000	34	20U	39	15	53	***22000 D***	8.8 J	270 U	51	20
BENZENE	5	0.8 UJ	0.96 U	***38***	0.82 U	0.77 U	***68000 D***	0.86 U	93 U	1.2 U	1 U
CARBON DISULFIDE	6000	0.64 U	0.77 U	0.78 U	0.65 U	0.62 U	60 U	0.68 U	74 U	0.97 U	0.8 U
CHLOROBENZENE	600	0.79 UJ	0.96 U	0.97 UJ	0.81 UJ	0.76 U	75 U	0.85 U	92 U	1.2 U	0.99 U
CHLOROETHANE	220000	0.55 U	0.66 U	0.67 U	0.56 U	0.53 U	52 U	0.59 U	64 U	0.83 U	0.69 U
CHLOROFORM	320	0.96 U	1.2 U	1.2 U	0.99 U	0.93 U	91 U	1 U	110 U	1.5 U	1.2 U
CIS-1,2-DICHLOROETHYLENE	300	0.73 U	0.88 UJ	0.89 U	0.74 UJ	0.7 U	69 U	0.78 U	85 U	1.1 U	0.91 U
CYCLOHEXANE	6500000	0.78 UJ	0.94 U	0.95 U	0.8 U	0.76 U	430	0.84 U	3600 J	1.2 U	0.98 U
ETHYLBENZENE	5800	0.73 UJ	0.88 U	0.89 U	0.75 U	0.7 U	4000 D	0.78 U	85 U	1.1 U	0.92 U
ISOPROPYLBENZENE (CUMENE)	1900000	0.68 UJ	0.82 U	0.83 U	0.69 U	0.65 U	5200 D	0.73 U	25000	1 U	0.85 U
M,P-XYLENE	19000	2.5 J	0.77 U	6.8	0.65 U	9.9	15000 D	0.68 U	74 U	0.97 U	0.8 U
METHYL ACETATE	22000	1.8 J	1.8 UJ	1.8 U	1.5 U	1.4 U	140 U	1.6 U	170 U	2.3 U	1.9 U
METHYL ETHYL KETONE	900	2.3 U	2.8 U	5.4 J	2.4 U	2.2 U	440 J	2.5 U	270 U	3.5 U	2.9 U
METHYL ISOBUTYL KETONE	33000000	1.9 UJ	2.3 U	2.4 U	2 U	1.9 U	13000 D	2.1 U	230 U	2.9 U	2.4 U
METHYLCYCLOHEXANE	NE	0.7 UJ	0.85 U	2.3 J	0.72 U	0.68 U	5400	0.76 U	72000	1.1 U	0.88 U
METHYLENE CHLORIDE	10	8.3	10U	10.2U	8.6U	3.8 J	44 U	***19 *J***	55 U	12.6U	10.4U
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.64 UJ	0.78 U	2.6 J	0.66 U	5.2	2100 J	0.69 U	75 U	0.98 U	0.81 U
TETRACHLOROETHYLENE (PCE)	5	***52 J+***	0.84 U	0.85 U	0.72 U	0.67 U	66 U	0.75 U	81 U	1.1 U	0.88 U
TOLUENE	7000	1.8 J	0.91 U	5.4	0.77 U	29	***28000 D***	0.81 U	88 U	1.1 U	0.95 U
TRANS-1,2-DICHLOROETHENE	600	0.85 U	1 UJ	1 U	0.87 UJ	0.83 U	81 U	0.92 U	99 U	1.3 U	1.1 U
TRICHLOROETHYLENE (TCE)	10	0.78 UJ	0.94 U	0.95 U	0.8 U	0.75 U	74 U	0.83 U	90 U	1.2 U	0.98 U
VINYL CHLORIDE	5	0.64 U	0.77 UJ	0.78 U	0.65 U	0.62 U	60 U	0.69 U	74 U	0.97 U	0.8 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2A

SUMMARY OF SOIL SAMPLE DETECTIONS - VOCs

SAMPLE ID:		DUP-7-102317	B-76(1-3)	B-77(0-1)-092817	B-77(1-3)-092817	DUP-1-092817	B-77(1-3)	B-78(0.5-1.5)-102517	B-78(5-7)-102517	B-79(1-2)-102617	B-79(5-6)-102617
SAMPLE DEPTH (FT BGS)		1-3		0-1	1-3	1-3		0.5-1.5	5-7	1-2	5-6
COLLECTION DATE:		10/23/2017		9/28/2017	9/28/2017	9/28/2017		10/25/2017	10/25/2017	10/26/2017	10/26/2017
Lab Analyte	PAL	Result		Result	Result	Result		Result	Result	Result	Result
VOCs (ug/kg)											
1,1,1-TRICHLOROETHANE (TCA)	300	1.1	U	0.88 U	1.3 UJ	0.98	U	0.87 UJ	1.3 U	1.1 U	42 U
1,1-DICHLOROETHANE	200	1.2	U	0.93 U	1.4 U	1	U	0.92 U	1.4 U	1.2 U	44 U
1,2-DIBROMO-3-CHLOROPROPANE	5	0.77	U	0.59 U	0.89 U	0.66	U	0.58 U	0.86 U	0.75 U	28 U
1,3-DICHLOROBENZENE	19000	0.86	U	0.65 U	0.99 U	0.73	U	0.65 U	0.96 U	0.83 UJ	31 U
2-HEXANONE	200000	2.1	U	1.6 U	2.5 U	1.8	U	1.6 U	2.4 U	2.1 U	78 U
ACETONE	19000	41		2.6 U	33	36		42	100	99	130 U
BENZENE	5	1.2	U	0.92 U	1.4 U	1	U	0.91 U	1.4 U	1.2 U	44 U
CARBON DISULFIDE	6000	0.96	U	0.74 U	1.1 U	0.82	U	0.73 U	1.1 U	0.94 U	35 U
CHLOROBENZENE	600	1.2	U	0.91 U	1.4 U	1	U	0.91 U	1.3 U	1.2 UJ	44 U
CHLOROETHANE	220000	0.83	U	0.63 U	0.96 U	0.71	U	0.63 U	0.93 U	0.81 U	30 U
CHLOROFORM	320	1.5	U	1.1 U	1.7 U	1.2	U	1.1 U	1.6 U	1.4 U	53 U
CIS-1,2-DICHLOROETHYLENE	300	1.1	U	0.84 U	1.3 U	0.94	U	0.83 UJ	1.2 U	1.1 U	40 U
CYCLOHEXANE	6500000	1.2	U	0.9 U	1.4 U	1	U	0.89 U	1.3 U	100 J	66 J
ETHYLBENZENE	5800	1.1	U	0.84 U	1.3 U	0.94	U	0.9 U	1.2 U	400 J+	40 U
ISOPROPYLBENZENE (CUMENE)	1900000	1	U	0.78 U	1.2 U	0.87	U	0.77 U	1.1 U	1400 J+	1700
M,P-XYLENE	19000	0.97	U	0.74 U	1.1 U	0.82	U	0.73 U	1.1 U	1300 J+	130 J
METHYL ACETATE	22000	2.3	U	1.7 U	2.6 UJ	1.9	U	1.7 UJ	2.5 U	2.2 U	83 U
METHYL ETHYL KETONE	900	3.5	U	2.7 U	4.1 U	3	U	2.6 U	3.9 U	3.4 U	130 U
METHYL ISOBUTYL KETONE	33000000	2.9	U	2.2 U	3.4 U	2.5	U	2.2 U	3.3 U	2.8 U	110 U
METHYLCYCLOHEXANE	NE	1.1	U	0.81 U	1.2 U	0.91	U	0.81 U	1.2 U	9300 J+	6200
METHYLENE CHLORIDE	10	12.6	U	0.54 UJ	*28 BJ-*	*28 B*		0.54 U	*17*	4.9 J	26 U
O-XYLENE (1,2-DIMETHYLBENZENE)	19000	0.97	U	0.74 U	1.1 U	0.83	U	0.74 U	1.1 U	190 J	36 U
TETRACHLOROETHYLENE (PCE)	5	1.1	U	0.81 U	1.2 U	0.9	U	0.8 U	1.2 U	1 U	39 U
TOLUENE	7000	1.1	U	0.87 U	1.3 U	0.98	U	69	1.3 U	6.9 J+	42 U
TRANS-1,2-DICHLOROETHENE	600	1.3	U	0.99 U	1.5 U	1.1	U	0.98 UJ	1.4 U	1.3 U	47 U
TRICHLOROETHYLENE (TCE)	10	1.2	U	0.9 U	1.4 U	1	U	0.89 U	1.3 U	1.1 U	43 U
VINYL CHLORIDE	5	0.97	U	0.74 U	1.1 U	0.82	U	0.73 U	1.1 U	0.94 U	35 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-3(1-2)-102517	B-3(2-3)-102517	B-4(0-1)-100617	B-4(1-3)-100617	B-5(0.5-1.5)-101317	B-5(5-6.5)-101317	B-6(3.5-4.5)-101717	B-6(5-5.5)-101717	B-7(0.5-1.5)-101017	B-7(5-6)-101017	B-8(1.5-2.5)-101017	B-8(5-6.25)-101017
SAMPLE DEPTH (FT BGS)		1-2	2-3	0-1	1-3	0.5-1.5	5-6.5	3.5-4.5	5-5.5	0.5-1.5	5-6	1.5-2.5	5-6.25
COLLECTION DATE:		10/25/2017	10/25/2017	10/6/2017	10/6/2017	10/13/2017	10/13/2017	10/17/2017	10/17/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	100 U	37 U	93 U	38 U	19 U	18 U	19 U	190 U	19 U	19 U	19 U	19 U
2-METHYLNAPHTHALENE	8000	2200	100 J	55 UJ	120 J	11 U	11 U	11 U	4100 J	11 U	11 U	11 U	11 U
2-METHYLPHENOL (O-CRESOL)	310000	86 U	32 U	79 U	33 U	16 U	15 U	16 U	160 U	16 U	16 U	16 U	16 U
2-NITROANILINE	39000	74 U	27 U	68 U	28 UJ	14 U	13 U	14 U	140 U	14 U	14 U	14 U	14 U
4-METHYLPHENOL (P-CRESOL)	31000	65 U	24 U	60 U	25 U	12 U	12 U	12 U	120 U	12 U	12 U	13 U	12 U
4-NITROANILINE	27000	120 U	43 U	110 U	44 UJ	22 U	21 U	22 U	210 U	22 U	22 U	22 U	21 U
ACENAPHTHENE	110000	1600	46 U	330 J	47 U	23 U	22 U	24 U	5900 D	23 U	23 U	24 U	23 U
ACENAPHTHYLENE	NE	130	1.8 J	130	820	3.7 J	1.6 U	1.7 U	75	12 J	1.7 U	76	26
ACETOPHENONE	2000	56 U	21 U	52 U	21 U	11 U	10 U	11 U	100 U	52 J	10 U	11 U	10 U
ANTHRACENE	2400000	900 J	50 U	600 J	710	26 U	24 U	26 U	14000 D	25 U	25 U	210	25 U
ATRAZINE	200	***850 J***	65 U	160 U	67 U	34 U	32 U	34 U	330 U	33 U	33 U	34 U	33 U
BENZALDEHYDE	170000	36 U	13 U	33 U	13 U	6.7 U	6.4 U	6.8 U	66 U	6.6 U	6.6 U	6.8 U	6.6 U
BENZO(A)ANTHRACENE	900	***1100***	13 J	***2300***	***3200***	76	12 J	13 J	***15000 D***	84	22	500	110
BENZO(A)PYRENE	110	***530 J***	5.6 J	***2100***	***3100***	62	8.8 J	9.4 J	***12000 D***	84	22	***430***	110
BENZO(B)FLUORANTHENE	1100	***1800***	10 J	***2800***	***4200***	89	12 J	15 J	***14000 D***	120	22	620	150
BENZO(G,H,I)PERYLENE	3800000000	840 J	58 U	1400	1700	54 J	28 U	30 U	5800	63 J	29 U	380	77 J
BENZO(K)FLUORANTHENE	11000	620 J	63 U	960	1500	32 U	31 U	33 U	5200 J	32 U	32 U	220	46 J
BENZYL BUTYL PHTHALATE	230000	140 U	51 U	130 U	53 U	26 U	25 U	26 U	260 U	26 U	26 U	27 U	26 U
BIPHENYL (DIPHENYL)	47000	480 J	45 U	110 U	46 U	23 U	22 U	23 U	1400 J	23 U	23 U	23 U	23 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	310 J	60 U	430 J	190 J	53 J	29 U	31 U	300 U	1900 D	67 J	160 J	77 J
CAPROLACTAM	12000	59 U	22 U	55 U	22 U	11 U	11 U	11 U	110 U	11 U	11 U	11 U	11 U
CARBAZOLE	24000	340 J	49 U	300 J	51 U	25 U	24 U	25 U	3800 J	25 U	25 U	120 J	25 U
CHRYSENE	80000	1900	19 U	2300	2800	82 J	9.5 U	10 U	14000 D	97 J	53 J	570	130 J
DIBENZ(A,H)ANTHRACENE	110	***200***	0.28 U	***440 J***	***720***	9.3 J	1.4 U	1.4 U	***1700 J***	19	1.4 U	76	20
DIBENZOFURAN	73000	2100	47 U	120 U	48 U	24 U	23 U	24 U	7500 D	24 U	24 U	24 U	24 U
DIETHYL PHTHALATE	88000	150 U	57 U	140 U	58 U	29 U	28 U	29 U	280 U	29 U	29 U	30 U	29 U
DIMETHYL PHTHALATE	NE	230 J	270 J	570 J	360 J	520	460	270	260 U	86 J	62 J	570	84 J
DI-N-BUTYL PHTHALATE	760000	2200	47 U	450 J	48 U	24 U	23 U	24 U	230 U	6100 D	200	24 U	24 U
FLUORANTHENE	1300000	4400	55 U	4400	5000	110 J	26 U	28 U	44000 D	100 J	28 U	1300 J	240 J
FLUORENE	170000	2700	46 U	220 J	93 J	23 U	22 U	24 U	7300 D	23 U	23 U	24 U	23 U
INDENO(1,2,3-C,D)PYRENE	1100	720 J	3.3 J	***1400***	***2000***	35	5.3 J	3.8 J	***5800***	61	8.5 J	360	67
ISOPHORONE	200	86 U	32 U	79 U	33 U	16 U	15 U	16 U	160 U	81 J	16 U	16 U	16 U
NAPHTHALENE	3800	***5300***	580	57 U	240 J	12 U	11 U	12 U	***7400 D***	12 U	12 U	12 U	11 U
N-NITROSODIPHENYLAMINE	400	120 U	44 U	110 U	45 U	22 U	21 U	23 U	220 U	22 U	22 U	23 U	22 U
PENTACHLOROPHENOL	300	7.1 U	1.3 U	6.6 U	6.8 U	6.7 U	6.4 U	6.8 U	6.6 U	6.7 U	6.7 U	6.8 U	6.6 U
PHENANTHRENE	NE	9700	64 D	2700	1000	65	11 J	19	59000 D	73	19	1000	180
PHENOL	8000	62 U	23 U	210 J	130 J	140 J	120 J	82 J	110 U	230 J	150 J	170 J	170 J
PYRENE	840000	3600	56 U	3600	3500	130 J	27 U	29 U	39000 D	120 J	28 U	1000	200

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

J+ - The result is an estimated quantity, and the result may be biased high.

J- - The result is an estimated quantity, and the result may be biased low.

R - The reported analyte concentration is rejected due to serious deficiencies with associated quality control results. The presence or absence of the analyte cannot be confirmed. The data may not be suitable for its intended project use.

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-9(0-1)-101617	B-9(5-6)-101617	B-10(3-5)-101617	B-12(0-1)-101317	B-12(1-3)-101317	B-13(0-1)-101117	B-13(1-3)-101117	B-14(0-1)-101717	B-14(7-7.5)-101717	B-15(0.25-1.25)-101717	B-15(5-6)-101717	B-16(0-1)-101217
SAMPLE DEPTH (FT BGS)		0-1	5-6	3-5	0-1	1-3	0-1	1-3	0-1	7-7.5	0.25-1.25	5-6	0-1
COLLECTION DATE:		10/16/2017	10/16/2017	10/16/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/17/2017	10/17/2017	10/12/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	95 U	22 U	22 U	20 U	20 U	20 U	***1200***	18 U	18 U	19 U	19 U	19 U
2-METHYLNAPHTHALENE	8000	56 U	13 U	13 U	72 J	54 J	12 U	140 J	11 U	11 U	11 U	11 U	510
2-METHYLPHENOL (O-CRESOL)	310000	81 U	19 U	19 U	17 U	17 U	17 U	150 J	15 U	16 U	16 U	16 U	16 U
2-NITROANILINE	39000	70 U	16 U	16 U	15 U	14 U	15 U	14 U	13 U	14 U	14 U	14 U	14 UJ
4-METHYLPHENOL (P-CRESOL)	31000	61 U	14 U	14 U	13 U	13 U	13 U	220 J	12 U	12 U	47 J	12 U	12 U
4-NITROANILINE	27000	110 U	25 U	25 U	300 J	66 J	23 U	22 U	21 U	21 U	54 J	22 U	22 U
ACENAPHTHENE	110000	730 J	91 J	27 U	25 U	24 U	24 U	70 J	99 J	23 U	24 U	23 U	24 U
ACENAPHTHYLENE	NE	180	22	6.4 J	16 J	21	14 J	62	39	0.33 U	22	1.7 U	56
ACETOPHENONE	2000	53 U	12 U	12 U	11 U	11 U	11 U	380	10 U	10 U	11 U	11 U	11 U
ANTHRACENE	2400000	1400	220	29 U	61 J	27 U	93 J	97 J	260	25 U	26 U	26 U	26 U
ATRAZINE	200	170 U	39 U	38 U	36 U	35 U	35 U	***1300***	32 U	33 U	34 U	34 U	34 U
BENZALDEHYDE	170000	33 U	7.8 U	7.7 U	7.1 U	6.9 U	59 J	6.9 U	6.4 U	6.5 U	6.7 U	6.7 U	6.8 U
BENZO(A)ANTHRACENE	800	***4800***	***1000***	49	310	240	300	410	720	0.57 U	28	13 J	68 J+
BENZO(A)PYRENE	110	***4400***	***960***	30	***330***	***270***	***260***	***280***	***650***	0.64 U	28	9.3 J	76 J+
BENZO(B)FLUORANTHENE	1100	***5900***	1100	45	490	420	420 J	620	880	0.28 U	100	11 J	130 J+
BENZO(G,H,I)PERYLENE	380000000	3200	580	34 U	270	230	160 J	260	430	29 U	100 J	30 U	110 J
BENZO(K)FLUORANTHENE	11000	1700	360	37 U	180 J	130 J	110 J	210	290	31 U	32 U	32 U	33 U
BENZYL BUTYL PHTHALATE	230000	130 U	31 U	30 U	28 U	27 U	110 J	27 U	25 U	26 U	26 U	26 U	26 U
BIPHENYL (DIPHENYL)	47000	110 U	27 U	26 U	24 U	24 U	24 U	23 U	22 U	22 U	23 U	23 U	82 J
BIS(2-ETHYLHEXYL) PHTHALATE	35000	1400	120 J	35 U	53 J	32 U	2600	***87000 D***	39 J	30 U	22000 D	370	600
CAPROLACTAM	12000	56 U	13 U	13 U	12 U	12 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U
CARBAZOLE	24000	760 J	29 U	29 U	27 U	25 U	59 J	51 J	120 J	24 U	25 U	25 U	25 U
CHRYSENE	80000	5200	1100	11 U	410	310	360	630	740	9.7 U	10 U	10 U	170 J
DIBENZ(A,H)ANTHRACENE	110	***800 J***	110	4.3 J	46	69 J	53 J	92	94	0.28 U	21	1.4 U	21 J+
DIBENZOFURAN	73000	390 J	28 U	27 U	26 U	25 U	25 U	86 J	60 J	23 U	24 U	24 U	24 U
DIETHYL PHTHALATE	88000	140 U	34 U	33 U	31 U	30 U	30 U	30 U	28 U	28 U	29 U	29 U	29 U
DIMETHYL PHTHALATE	NE	370 J	430	320	690	650	980	46 J	160 J	340	280	380	27 U
DI-N-BUTYL PHTHALATE	760000	400 J	28 U	27 U	26 U	25 U	25 U	25 U	23 U	23 U	1600 J	24 U	24 U
FLUORANTHENE	1300000	9500	1500	72 J	450	300 J	680 J	1400 J	1300	27 U	28 U	28 U	110 J
FLUORENE	170000	600 J	82 J	27 U	25 U	24 U	24 U	120 J	100 J	23 U	24 U	23 U	24 U
INDENO(1,2,3-C,D)PYRENE	1100	***2800***	490	15 J	250	210	170 J	260	390	0.39 U	58	5.6 J	72 J
ISOPHORONE	200	81 U	19 U	19 U	17 U	17 U	17 U	17 U	15 U	16 U	190	16 U	16 U
NAPHTHALENE	3800	490 J	14 U	13 U	150 J	97 J	12 U	330	51 J	11 U	12 U	12 U	290
N-NITROSODIPHENYLAMINE	400	110 U	26 U	26 U	24 U	23 U	23 U	23 U	21 U	22 U	22 U	22 U	23 U
PENTACHLOROPHENOL	300	6.7 U	7.9 U	7.7 U	7.2 U	7 U	7 U	6.9 U	6.4 U	1.3 U	6.7 R	6.7 U	6.8 U
PHENANTHRENE	NE	7700	750	72	330	240	490	1200	1000	0.3 U	43	24	260
PHENOL	8000	59 U	150 J	140 J	220 J	180 J	140 J	170 J	64 J	93 J	83 J	120 J	150 J
PYRENE	840000	9300	2000	83 J	510	300	590	990	1200	28 U	29 U	28 U	250

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-16(7-7.75)-101217	B-17(0.25-1.25)-101717	B-17(5-6.5)-101717	DUP-6-101717	B-17(5-6.5)	B-18(0-1)-101217	B-18(5-6)-101217	B-19(0-1)-101117	B-19(2-4)-101117	B-20(3.5-4)-101817	B-20(5-6)-101817	B-22(0-1)-100617
SAMPLE DEPTH (FT BGS)		7-7.75	0.25-1.25	5-6.5	5-6.5		0-1	5-6	0-1	2-4	3.5-4	5-6	0-1
COLLECTION DATE:		10/12/2017	10/17/2017	10/17/2017	10/17/2017		10/12/2017	10/12/2017	10/11/2017	10/11/2017	10/18/2017	10/18/2017	10/6/2017
Lab Analyte	PAL	Result	Result	Result	Result		Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	37 U	180 U	20 U	20 U		18 U	20 U	19 U	19 U	21 U	20 U	18 U
2-METHYLNAPHTHALENE	8000	4900 D	110 U	12 U	12 U		11 U	12 U	12 U	11 U	12 U	12 U	46 J
2-METHYLPHENOL (O-CRESOL)	310000	31 U	160 U	17 U	17 U		16 U	17 U	17 U	16 U	18 U	17 U	15 U
2-NITROANILINE	39000	27 U	130 U	15 U	15 U		14 UJ	14 U	14 U	14 U	15 U	15 U	13 U
4-METHYLPHENOL (P-CRESOL)	31000	24 U	120 U	13 U	13 U		12 U	13 U	13 U	12 U	13 U	13 U	12 U
4-NITROANILINE	27000	42 U	210 U	23 U	23 U		21 U	23 U	22 U	22 U	24 U	23 U	21 U
ACENAPHTHENE	110000	280 J	230 U	25 U	25 U		23 U	24 U	24 U	24 U	25 U	25 U	22 U
ACENAPHTHYLENE	NE	93 J+	1.6 U	13 J	1.8 U		69	77	32	8.2 J	1.8 U	1.8 U	33
ACETOPHENONE	2000	20 U	100 U	11 U	11 U		10 U	11 U	11 U	11 U	11 U	11 U	10 U
ANTHRACENE	2400000	50 U	250 U	27 U	27 U		190	270	78 J	26 U	28 U	27 U	51 J
ATRAZINE	200	65 U	320 U	35 U	35 U		33 U	35 U	34 U	34 U	36 U	36 U	32 U
BENZALDEHYDE	170000	13 U	65 U	7.1 U	7 U		6.5 U	7 U	55 J	6.7 U	7.3 U	7.1 U	6.4 U
BENZO(A)ANTHRACENE	800	74 J+	70	390 J	81 J		530	***1000***	370	94	75	12 J	260
BENZO(A)PYRENE	110	47 J+	3.1 U	***400***	85 J		***520***	***910***	***410***	84	52	7.9 J	***310***
BENZO(B)FLUORANTHENE	1100	40 J+	110	520 J	110 J		1100	1100	610	130	65	9.9 J	450
BENZO(G,H,I)PERYLENE	3800000000	57 U	290 U	250	64 J		460	490	340	65 J	32 U	31 U	270
BENZO(K)FLUORANTHENE	11000	63 U	310 U	220 J	34 U		350	400	230	33 U	35 U	34 U	140 J
BENZYL BUTYL PHTHALATE	230000	51 U	490 J	1200 J	320 J		26 U	27 U	27 U	26 U	28 U	28 U	42 J
BIPHENYL (DIPHENYL)	47000	710	220 U	24 U	24 U		22 U	24 U	23 U	23 U	25 U	24 U	22 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	***47000 D***	10000	4400 J	2300 J		430	32 U	1500	590	33 U	33 U	29 U
CAPROLACTAM	12000	22 U	110 U	12 U	12 U		11 U	12 U	11 U	11 U	12 U	12 U	11 U
CARBAZOLE	24000	49 U	240 U	26 U	26 U		180 J	75 J	54 J	25 U	27 U	27 U	24 U
CHRYSENE	80000	19 U	96 U	370	87 J		790	980	470	130 J	11 U	11 U	300
DIBENZ(A,H)ANTHRACENE	110	10 J	1.4 U	57 J	9.7 J		110	***140***	57	35 U	8.1 J	1.5 U	89
DIBENZOFURAN	73000	46 U	230 U	25 U	25 U		23 U	25 U	25 U	24 U	26 U	26 U	23 U
DIETHYL PHTHALATE	88000	56 U	280 U	31 U	30 U		28 U	30 U	30 U	29 U	31 U	31 U	28 U
DIMETHYL PHTHALATE	NE	52 U	260 U	460	410		55 J	28 U	670	760	170 J	250	290
DI-N-BUTYL PHTHALATE	760000	46 U	230 U	25 U	25 U		23 U	25 U	140 J	110 J	26 U	26 U	80 J
FLUORANTHENE	1300000	110 J	270 U	350 J	98 J		1300 J	2000 J	740	190 J	30 U	30 U	430
FLUORENE	170000	350 J	230 U	25 U	25 U		23 U	24 U	24 U	24 U	25 U	25 U	22 U
INDENO(1,2,3-C,D)PYRENE	1100	15 J	55	250	51 J		470	510	300	52	30	2.1 U	260
ISOPHORONE	200	31 U	160 U	17 U	17 U		16 U	17 U	17 U	16 U	18 U	17 U	15 U
NAPHTHALENE	3800	2700 J	110 U	12 U	12 U		11 U	12 U	12 U	12 U	13 U	12 U	88 J
N-NITROSODIPHENYLAMINE	400	43 U	220 U	24 U	23 U		22 U	23 U	23 U	22 U	24 U	24 U	21 U
PENTACHLOROPHENOL	300	6.5 U	6.5 U	7.1 U	7 U		6.6 U	7 U	6.9 R	6.8 U	7.3 U	7.2 U	6.4 U
PHENANTHRENE	NE	2500 J	130	41	23		610	1000	430	130	230	24	240
PHENOL	8000	120 J	110 U	140 J	140 J		210 J	170 J	220 J	230 J	89 J	100 J	84 J
PYRENE	840000	290 J	270 U	490	110 J		1100	1700	820	190	31 U	30 U	470

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-22(1-3)-100617	B-23(0-1)-100517	B-23(1-3)-100517	B-24(0.5-1.5)-100517	B-24(1.5-3.5)-100517	DUP-3-100517 B-24(1.5-3.5)	B-25(0.5-1.5)-100517	B-25(5-5.5)-100517	B-26(0.5-1.5)-100517	B-26(5-5.8)-100517	B-27(0.5-1.5)-100517
SAMPLE DEPTH (FT BGS)		1-3	0-1	1-3	0.5-1.5	1.5-3.5	1.5-3.5	0.5-1.5	5-5.5	0.5-1.5	5-5.8	0.5-1.5
COLLECTION DATE:		10/6/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)												
2,4-DIMETHYLPHENOL	1000	18 U	18 U	19 U	18 U	100 U	100 U	36 U	37 U	20 U	40 U	19 U
2-METHYLNAPHTHALENE	8000	11 U	11 UJ	11 U	10 U	360 J	440 J	21 U	22 U	12 U	24 U	11 U
2-METHYLPHENOL (O-CRESOL)	310000	16 U	15 U	16 U	15 U	85 U	86 U	31 U	32 U	17 U	34 U	16 U
2-NITROANILINE	39000	14 UJ	13 U	14 UJ	13 U	73 U	74 U	27 U	27 U	15 U	30 U	14 U
4-METHYLPHENOL (P-CRESOL)	31000	12 U	12 U	12 U	11 U	64 U	65 U	23 U	24 U	13 U	26 U	12 U
4-NITROANILINE	27000	21 U	20 U	22 U	20 U	110 U	120 U	41 U	42 U	23 U	46 U	22 U
ACENAPHTHENE	110000	23 U	22 U	24 U	71 J	630 J	880 J	120 J	46 U	25 U	50 U	23 U
ACENAPHTHYLENE	NE	38	29	18 J	24	31	36	55	8.7 J	1.8 U	25	5.8 J
ACETOPHENONE	2000	10 U	10 U	11 U	9.8 UJ	56 U	56 U	20 U	21 U	57 J	22 U	11 UJ
ANTHRACENE	2400000	25 U	75 J	26 U	140 J	2200	2800	580	50 U	28 U	54 U	26 U
ATRAZINE	200	33 U	31 U	34 U	31 U	180 U	180 U	64 U	65 U	36 U	71 U	34 U
BENZALDEHYDE	170000	6.5 U	6.3 U	200 J	6.2 U	35 U	36 U	13 U	13 U	7.2 U	14 U	6.7 U
BENZO(A)ANTHRACENE	800	280	340	180	790	***4600***	***5100***	***3600***	94	31	270	170
BENZO(A)PYRENE	110	***330***	***360***	***210***	***820***	***3800***	***4100***	***3800***	89	27	***220***	***160***
BENZO(B)FLUORANTHENE	1100	430	540	270	***1200***	***5100***	***5600***	***4800***	130	60	320 J	230
BENZO(G,H,I)PERYLENE	3800000000	240	300	140 J	650	2500	2700	2300	58 U	32 U	130 J	120 J
BENZO(K)FLUORANTHENE	11000	130 J	150 J	89 J	440	1700	1800	1500	63 U	35 U	69 U	77 J
BENZYL BUTYL PHTHALATE	230000	25 U	25 U	27 U	24 U	140 U	140 U	50 U	51 U	28 U	56 U	26 U
BIPHENYL (DIPHENYL)	47000	22 U	21 U	23 U	21 U	120 U	120 U	44 U	45 U	25 U	48 U	23 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	30 U	100 J	31 U	360	160 U	160 U	310 J	60 U	33 U	65 U	31 U
CAPROLACTAM	12000	11 U	10 U	11 U	10 U	59 U	59 U	21 U	22 U	12 U	24 U	11 U
CARBAZOLE	24000	24 U	39 J	25 U	92 J	620 J	760 J	530 J	49 U	27 U	53 U	25 U
CHRYSENE	80000	280	380	170 J	950	4600	5000	3600	110 J	110 J	260 J	210
DIBENZ(A,H)ANTHRACENE	110	74	85	41	***180***	***770 J***	***820 J***	***710***	18	12 J	48	30
DIBENZOFURAN	73000	23 U	23 U	24 U	22 U	700 J	920 J	46 U	47 U	26 U	51 U	24 U
DIETHYL PHTHALATE	88000	28 U	27 U	29 U	27 U	150 U	150 U	55 U	57 U	31 U	61 U	29 U
DIMETHYL PHTHALATE	NE	26 U	390	27 U	360	640 J	530 J	280 J	310 J	530	450	270
DI-N-BUTYL PHTHALATE	760000	23 U	23 U	24 U	22 U	130 U	130 U	46 U	47 U	26 U	51 U	24 U
FLUORANTHENE	1300000	370	680	240 J	1600 J	10000 J	11000 J	5900 J	160 J	75 J	410 J	250 J
FLUORENE	170000	23 U	22 U	24 U	22 U	740 J	1000	100 J	46 U	25 U	50 U	23 U
INDENO(1,2,3-C,D)PYRENE	1100	240	280	140	590	***2500***	***2600***	***2200***	57	22	140	94
ISOPHORONE	200	16 U	15 U	16 U	15 U	85 U	86 U	31 U	32 U	17 U	34 U	16 U
NAPHTHALENE	3800	11 U	11 U	12 U	44 J	790 J	850 J	22 U	23 U	13 U	120 J	49 J
N-NITROSODIPHENYLAMINE	400	22 UJ	21 U	23 UJ	21 U	120 U	120 U	43 U	43 U	24 U	47 U	22 U
PENTACHLOROPHENOL	300	6.5 U	6.3 U	6.8 U	6.2 U	7.1 U	7.1 U	6.4 R	280	7.3 U	7.1 U	6.7 U
PHENANTHRENE	NE	150	350	130	660	8500	11000	2300	120	140	370 J	140
PHENOL	8000	170 J	93 J	240 J	91 J	200 J	250 J	150 J	23 U	210 J	200 J	410
PYRENE	840000	560	570	270	1400	8700	10000	4300	210 J	77 J	470	240

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-27(5-5.5)-100517	B-28(0.5-1.5)-100917	B-28(1.5-2.75)-100917	B-29(0-1)-092917	B-29(1-3)-092917	B-30(0-1)-100417	B-30(3-3.8)-100417	B-31(1-2)-101817	B-31(5-5.5)-101817	B-32(1-2)-100417	B-32(2-4)-100417	B-33(0.5-1.5)-100417
SAMPLE DEPTH (FT BGS)		5-5.5	0.5-1.5	1.5-2.75	0-1	1-3	0-1	3-3.8	1-2	5-5.5	1-2	2-4	0.5-1.5
COLLECTION DATE:		10/5/2017	10/9/2017	10/9/2017	9/29/2017	9/29/2017	10/4/2017	10/4/2017	10/18/2017	10/18/2017	10/4/2017	10/4/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	41 U	95 U	47 U	20 U	20 U	94 U	250	20 U	21 U	19 U	21 U	18 U
2-METHYLNAPHTHALENE	8000	24 U	56 UJ	200 J	12 U	41 J	56 UJ	1400 J	84 J	110 J	11 UJ	180 J	11 UJ
2-METHYLPHENOL (O-CRESOL)	310000	35 U	81 U	40 U	96 J	17 U	81 U	17 U	17 U	18 U	76 J	65 J	51 J
2-NITROANILINE	39000	30 U	70 U	35 U	14 U	14 U	69 U	15 U	15 U	16 U	14 U	16 U	13 U
4-METHYLPHENOL (P-CRESOL)	31000	27 U	61 U	31 U	13 U	13 U	61 U	13 U	13 U	14 U	12 U	14 U	12 U
4-NITROANILINE	27000	47 U	110 U	54 U	23 U	23 U	110 U	23 U	23 U	110 J	21 U	74 J	20 U
ACENAPHTHENE	110000	51 U	120 U	350 J	180 J	220 J	310 J	81 J	25 U	540 J	57 J	26 U	86 J
ACENAPHTHYLENE	NE	10 J	110	320	27 J	14 J	58	32	38	40	81	97	20
ACETOPHENONE	2000	23 U	53 U	26 U	11 U	11 U	53 U	11 U	11 U	12 U	44 J	180 J	9.9 U
ANTHRACENE	2400000	56 U	760 J	1200	570	450 J	790 J	85 J	180 J	2700 D	160 J	170 J	130 J
ATRAZINE	200	73 U	170 U	84 U	35 U	35 U	170 U	38 U	36 U	38 U	33 U	37 U	31 U
BENZALDEHYDE	170000	15 U	33 U	17 U	7 U	6.9 U	33 U	7.1 U	7.2 U	7.5 U	48 J	7.5 U	42 J
BENZO(A)ANTHRACENE	800	160	***4300***	***3200***	***5000 D***	***2700 D***	***3000***	370	510	***5500 D***	750	***1400***	430 J
BENZO(A)PYRENE	110	***140***	***4100***	***2300***	***4600 D***	***2400***	***3500***	***410***	***450***	***4000 D***	***910***	***2200***	***380 J***
BENZO(B)FLUORANTHENE	1100	190	***5900***	***3200***	***6300 D***	***3600 D***	***4800***	580	640	***5800 D***	***1300***	***2600***	560 J
BENZO(G,H,I)PERYLENE	3800000000	64 U	2900	1400	2900 D	1400 D	2900	360	310	2300 D	600	1400	260
BENZO(K)FLUORANTHENE	11000	70 U	1400	940	2200	1000	1500	150 J	190 J	1800	350	800	160 J
BENZYL BUTYL PHTHALATE	230000	57 U	130 U	65 U	27 U	27 U	130 U	28 U	28 U	30 U	26 U	29 U	25 U
BIPHENYL (DIPHENYL)	47000	50 U	110 U	57 U	24 U	24 U	110 U	83 J	25 U	26 U	23 U	26 U	21 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	67 U	150 U	300 J	140 J	94 J	150 U	33 U	33 U	130 J	160 J	34 U	20000 D
CAPROLACTAM	12000	480 J	56 U	28 U	12 U	12 U	56 U	12 U	12 U	13 U	11 U	12 U	10 U
CARBAZOLE	24000	55 U	130 U	200 J	100 J	130 J	370 J	27 U	27 U	630 J	97 J	28 U	67 J
CHRYSENE	80000	150 J	4500	3300	4600 D	2600 D	3200	440	520	5500 D	850	1700	420 J
DIBENZ(A,H)ANTHRACENE	110	25	***910 J***	***510***	***910 J***	***460 J***	***820 J***	100 J	58	***750 J***	***190***	***400***	88 D
DIBENZOFURAN	73000	52 U	120 U	210 J	63 J	100 J	120 U	41 J	26 U	460 J	46 J	27 U	44 J
DIETHYL PHTHALATE	88000	63 U	140 U	72 U	30 U	30 U	140 U	31 U	31 U	33 U	29 U	32 U	27 U
DIMETHYL PHTHALATE	NE	380 J	460 J	500	510	370	480 J	270	340	260	260	480	250
DI-N-BUTYL PHTHALATE	760000	52 U	120 U	60 U	25 U	140 J	120 U	42 J	220	81 J	24 U	480	23 U
FLUORANTHENE	1300000	220 J	5100	6500	6400 D	4400	5300	500	910	13000 D	1800	1500 J	680
FLUORENE	170000	51 U	120 U	530	130 J	180 J	200 J	79 J	25 U	530 J	51 J	26 U	71 J
INDENO(1,2,3-C,D)PYRENE	1100	83	***2800***	***1400***	***2700 D***	1100	***2800***	320	300	***2400 D***	610	***1300***	240
ISOPHORONE	200	35 U	81 U	40 U	17 U	17 U	81 U	17 U	17 U	18 U	16 U	18 U	15 U
NAPHTHALENE	3800	91 J	58 U	110 J	58 J	59 J	300 J	400	280	330	94 J	340	63 J
N-NITROSODIPHENYLAMINE	400	48 U	110 U	56 U	23 U	23 U	110 U	24 U	24 U	25 U	22 U	25 U	21 U
PENTACHLOROPHENOL	300	7.3 U	6.7 U	8.4 U	1.4 U	1.4 U	6.7 U	1.4 U	7.3 U	7.6 U	6.6 U	7.5 U	1.3 U
PHENANTHRENE	NE	170	2900	5600	1800	1800	3600	540	760	12000 D	890	590	600 J
PHENOL	8000	230 J	58 U	200 J	84 J	93 J	58 U	13 U	110 J	100 J	150 J	170 J	51 J
PYRENE	840000	290 J	5800	5500	7100 D	3900 D	5200	600	980	12000 D	1500	2400	780 J

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-33(3.5-4.5)-100417	B-34(0-1)-100617	B-34(5-5.5)-100617	B-35(1-2)-100417	B-35(2-3.8)-100417	B-36(0-1)-100417	B-36(3-3.7)-100417	B-37(0-1)-100417	B-37(1-3)-100417	B-38(0-1)-100917	DUP-4-101017	B-38(0-1)	B-38(1-3)-100917
SAMPLE DEPTH (FT BGS)		3.5-4.5	0-1	5-5.5	1-2	2-3.8	0-1	3-3.7	0-1	1-3	0-1	0-1		1-3
COLLECTION DATE:		10/4/2017	10/6/2017	10/6/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/9/2017	10/9/2017		10/9/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result		Result
SVOCs (ug/kg)														
2,4-DIMETHYLPHENOL	1000	21 U	490	930	19 U	***3400 D***	17 U	***1100***	18 U	93 U	95 U	19 U		21 U
2-METHYLNAPHTHALENE	8000	12 U	790	2800 J	64 J	4800 D	75 J	310	11 U	55 U	56 U	11 U		13 U
2-METHYLPHENOL (O-CRESOL)	310000	57 J	16 U	16 U	17 U	19 U	15 U	21 U	16 U	79 U	81 U	16 U		18 U
2-NITROANILINE	39000	15 UJ	14 U	14 U	14 UJ	17 UJ	13 UJ	18 U	13 U	69 U	70 U	14 U		16 U
4-METHYLPHENOL (P-CRESOL)	31000	13 U	200 J	12 U	13 U	15 U	11 U	16 U	12 U	60 U	61 U	84 J		14 U
4-NITROANILINE	27000	24 U	21 U	21 U	22 UJ	26 U	20 U	28 U	21 U	110 U	110 U	21 U		25 U
ACENAPHTHENE	110000	59 J	90 J	470	24 U	420 J	22 U	30 U	23 U	120 U	530 J	23 U		27 U
ACENAPHTHYLENE	NE	46	45	99	7.1	59	23	29	55	47	72 J	1.6 UJ		0.38 U
ACETOPHENONE	2000	12 U	10 U	10 U	11 U	13 U	9.7 U	13 U	10 U	52 U	53 U	10 U		12 U
ANTHRACENE	2400000	160 J	97 J	240	26 U	110 J	50 J	33 U	180	270 J	300 J	25 U		29 U
ATRAZINE	200	37 U	32 U	33 U	34 U	40 U	31 U	43 U	32 U	160 U	170 U	33 U		38 U
BENZALDEHYDE	170000	7.3 U	6.5 U	6.6 U	6.8 U	7.9 U	6.1 U	8.5 U	6.5 U	33 U	34 U	6.6 U		7.6 U
BENZO(A)ANTHRACENE	800	410	290	240	84 D	180	250	4.4 J	720	***950***	720 J	28 J		8
BENZO(A)PYRENE	110	***420***	***320***	***240***	92 D	***120***	***240***	2.9 J	***820***	***890 J***	***660 J***	34 J		3.8 J
BENZO(B)FLUORANTHENE	1100	580	420	280	130 D	130	400	5.4	1100	***1200***	850 J	52 J		6.3
BENZO(G,H,I)PERYLENE	380000000	260	290	180 J	81 J	93 J	250	38 U	730	700 J	500 J	29 U		33 U
BENZO(K)FLUORANTHENE	11000	190 J	150 J	32 U	33 U	38 U	130 J	41 U	340	450 J	330 J	32 U		37 U
BENZYL BUTYL PHTHALATE	230000	29 U	25 U	26 U	27 U	31 U	310	33 U	25 U	130 U	130 U	26 U		30 U
BIPHENYL (DIPHENYL)	47000	25 U	76 J	190	23 U	290 J	21 U	29 U	22 U	110 U	110 U	23 U		26 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	1200	150 J	220	31 U	870 J	520	39 U	390	150 U	1600	30 U		64 J
CAPROLACTAM	12000	12 U	11 U	11 U	11 U	13 U	10 U	14 U	11 U	55 U	56 U	11 U		13 U
CARBAZOLE	24000	87 J	24 U	25 U	26 U	30 U	23 U	32 U	83 J	120 U	130 U	25 U		28 U
CHRYSENE	80000	440	350	310	110 J	290 J	260	13 U	950	1100	760 J	47 J		11 U
DIBENZ(A,H)ANTHRACENE	110	94	68	48	21 D	22	56	0.36 U	***180***	***160***	110 J	9.7 J		0.32 U
DIBENZOFURAN	73000	26 U	23 U	330	24 U	28 U	22 U	30 U	23 U	120 U	280 J	24 U		27 U
DIETHYL PHTHALATE	88000	32 U	28 U	29 U	30 U	34 U	27 U	37 U	28 U	140 U	150 U	29 U		33 U
DIMETHYL PHTHALATE	NE	410 J-	350	440	340	470	320	410	320	290 J	130 U	780		30 U
DI-N-BUTYL PHTHALATE	760000	26 U	23 U	24 U	24 U	28 U	22 U	30 U	23 U	120 U	120 U	24 U		27 U
FLUORANTHENE	1300000	820	460 J	390	120 J	240 J	440 J	35 U	1500 J	1900 J	1400 J	27 U		32 U
FLUORENE	170000	92 J	110 J	590	24 U	330 J	22 U	30 U	43 J	120 U	270 J	23 U		27 U
INDENO(1,2,3-C,D)PYRENE	1100	310	240	150	66 D	50	210	2.6 J	570	600 J	460 J	23 J		2.1 J
ISOPHORONE	200	18 U	16 U	16 U	17 U	19 U	15 U	21 U	16 U	79 U	81 U	16 U		18 U
NAPHTHALENE	3800	86 J	300	1100	190	2200	200	650	11 U	57 U	58 U	11 U		13 U
N-NITROSODIPHENYLAMINE	400	24 UJ	22 U	22 U	23 U	26 U	20 U	28 U	22 U	110 U	110 U	22 U		25 U
PENTACHLOROPHENOL	300	7.4 U	6.5 U	6.6 U	1.4 U	8 U	5.2 U	1.7 U	6.5 U	6.6 U	6.7 U	6.6 U		1.5 U
PHENANTHRENE	NE	690	550	1800	100 D	1200 D	140	33	700	1100	1100	24 J		35 J
PHENOL	8000	520 J-	150 J	12 U	200 J	14 U	110 J	15 U	170 J	58 U	500 J	190 J		200 J
PYRENE	840000	1000	650	610	150 J	650 J	420	36 U	1300	1800	1200	28 U		32 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-38(FILL)-100917	B-39(0.5-1.5)-100317	B-39(5-7)-100317	B-40(0-1)-092617	B-40(5-7)-092717	B-41(0-1)-092617	B-41(5-7)-092717	B-42(0.3-1.3)-100217	B-42(7-9)-100217	B-43(0-1)-092617	B-43(5-7)-092617	B-44(0-1)-100217
SAMPLE DEPTH (FT BGS)		-3-0	0.5-1.5	5-7	0-1	5-7	0-1	5-7	0.3-1.3	7-9	0-1	5-7	0-1
COLLECTION DATE:		10/9/2017	10/3/2017	10/3/2017	9/26/2017	9/27/2017	9/26/2017	9/27/2017	10/2/2017	10/2/2017	9/26/2017	9/26/2017	10/2/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2 4-DIMETHYLPHENOL	1000	92 U	20 U	20 U	100 U	22 U	93 U	19 U	94 U	25 U	18 U	19 U	94 U
2-METHYLNAPHTHALENE	8000	55 U	12 U	12 U	60 U	13 U	55 U	11 U	56 U	15 U	11 U	150 J	56 U
2-METHYLPHENOL (O-CRESOL)	310000	78 U	17 U	17 U	86 U	19 U	79 U	16 U	80 U	21 U	16 U	16 U	80 U
2-NITROANILINE	39000	68 U	14 U	15 U	74 U	16 U	68 U	14 U	69 U	18 U	13 U	14 U	69 U
4-METHYLPHENOL (P-CRESOL)	31000	60 U	13 U	13 U	65 U	14 U	60 U	12 U	61 U	56 J	12 U	12 U	61 U
4-NITROANILINE	27000	110 U	22 U	23 U	120 U	25 U	110 U	21 U	110 U	29 U	21 U	22 U	110 U
ACENAPHTHENE	110000	350 J	24 U	25 U	120 U	27 U	110 U	23 U	120 U	170 J	23 U	130 J	120 U
ACENAPHTHYLENE	NE	590 J	14 J	3.8 J	39 D	4 J	98 D	2.3 J	12 J	45 J	8.6 J	45 J	51 J
ACETOPHENONE	2000	51 U	11 U	11 U	56 U	12 U	52 U	10 U	53 U	14 U	10 U	11 U	52 U
ANTHRACENE	2400000	1300	26 U	27 U	140 U	30 U	440 J	25 U	130 U	430	25 U	350	130 U
ATRAZINE	200	160 U	34 U	36 U	180 U	39 U	160 U	33 U	170 U	44 U	32 U	34 U	170 U
BENZALDEHYDE	170000	32 U	6.9 U	7.2 U	36 U	7.8 U	33 U	6.6 U	33 U	8.9 U	6.4 U	6.8 U	33 U
BENZO(A)ANTHRACENE	800	***4800***	260 D	23	570 J	60 D	***2600***	70 D	110	***1900***	96 D	***1300***	510 J
BENZO(A)PYRENE	110	***4300***	***230 D***	26	***330 J***	55 D	***2400***	59	***140***	***1600***	75 D	***1200***	***530 J***
BENZO(B)FLUORANTHENE	1100	***5800***	270 D	31	930 J	89 D	***3300***	83 D	330 J	***2000***	120 J	***1600***	700 J
BENZO(G,H,I)PERYLENE	380000000	2800	120 J	32 U	550 J	34 U	1800	29 U	150 U	940	110 J	910	380 J
BENZO(K)FLUORANTHENE	11000	2100	64 J	35 U	340 J	38 U	1100	32 U	160 U	570	31 U	460	160 U
BENZYL BUTYL PHTHALATE	230000	130 U	27 U	28 U	4700	30 U	130 U	26 U	130 U	35 U	25 U	26 U	130 U
BIPHENYL (DIPHENYL)	47000	110 U	24 U	24 U	120 U	27 U	110 U	23 U	110 U	30 U	22 U	23 U	110 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	19000 D	32 U	33 U	4200	58 J	4700	30 U	150 U	41 U	300	950	150 U
CAPROLACTAM	12000	54 U	11 U	12 U	59 U	13 U	55 U	11 U	55 U	15 U	11 U	11 U	55 U
CARBAZOLE	24000	630 J	26 U	27 U	130 U	29 U	120 U	25 U	120 U	71 J	24 U	25 U	120 U
CHRYSENE	80000	4800	180 J	11 U	860 J	62 J	2600	71 J	50 U	1800	120 J	1300	480 J
DIBENZ(A,H)ANTHRACENE	110	***910 J***	38 D	0.3 U	180 U	11	***500 J***	9.8	60	***310***	17	***270***	95
DIBENZOFURAN	73000	240 J	25 U	26 U	130 U	28 U	120 U	24 U	120 U	60 J	23 U	89 J	120 U
DIETHYL PHTHALATE	88000	140 U	30 U	31 U	150 U	34 U	140 U	29 U	140 U	38 U	28 U	29 U	140 U
DIMETHYL PHTHALATE	NE	210 J	410	430	430 J	600	410 J	500	300 J	300	350	420	280 J
DI-N-BUTYL PHTHALATE	760000	430 J	25 U	26 U	130 U	28 U	190 J	24 U	120 U	32 U	23 U	24 U	120 U
FLUORANTHENE	1300000	9500 J	270 J	30 U	1000 J	77 J	3700	69 J	140 U	2900	180 J	1900	660 J
FLUORENE	170000	360 J	24 U	25 U	120 U	27 U	110 U	23 U	120 U	180 J	23 U	180 J	120 U
INDENO(1,2,3-C,D)PYRENE	1100	***2900***	130 D	14	460 J	41 D	***1700***	35 D	170	930	50 D	800	320 J
ISOPHORONE	200	78 U	17 U	17 U	86 U	19 U	79 U	16 U	80 U	21 U	110 J	16 U	80 U
NAPHTHALENE	3800	220 J	12 U	12 U	62 U	13 U	57 U	11 U	58 U	54 J	61 J	730	57 U
N-NITROSODIPHENYLAMINE	400	110 U	23 U	24 U	120 U	26 U	110 U	22 U	110 U	30 U	21 U	23 U	110 U
PENTACHLOROPHENOL	300	6.5 U	1.4 U	1.4 UJ	49 D	1.6 U	50 D	1.3 U	11 J	1.8 U	1.3 U	5 J	6.5 U
PHENANTHRENE	NE	5100	230 D	24	790 J	50 D	1700	30 D	87	2000	150 D	1400	340 J
PHENOL	8000	210 J	49 J	13 U	62 U	73 J	57 U	58 J	58 U	16 U	11 U	12 U	58 U
PYRENE	840000	7700	320	30 U	1100	90 J	3800	100 J	140 U	2700	200	2700	750 J

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-44(5-5.5)-100217	B-51(1-2)-092817	B-51(5-7)-092817	B-52(0-1)-102317	B-52(1-3)-102317	B-53(0-1)-092817	B-53(1-3)-092817	B-54(1-2)-092817	B-54(7-8)-092817	B-55(0.5-1.5)-100317	B-55(3.5-5)-100317	B-56(1-2)-092717
SAMPLE DEPTH (FT BGS)		5-5.5	1-2	5-7	0-1	1-3	0-1	1-3	1-2	7-8	0.5-1.5	3.5-5	1-2
COLLECTION DATE:		10/2/2017	9/28/2017	9/28/2017	10/23/2017	10/23/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	10/3/2017	10/3/2017	9/27/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	110 U	18 U	20 U	93 U	21 U	18 U	100 U	19 U	25 U	93 U	21 U	19 U
2-METHYLNAPHTHALENE	8000	1100	11 U	110 J	55 U	12 U	11 U	1500	2000 D	15 U	55 UJ	12 U	66 J
2-METHYLPHENOL (O-CRESOL)	310000	92 U	15 U	17 U	79 U	18 U	15 U	86 U	16 U	21 U	80 U	18 U	16 U
2-NITROANILINE	39000	79 U	220	15 U	68 U	83 J	13 U	74 U	14 U	18 U	69 U	15 U	14 U
4-METHYLPHENOL (P-CRESOL)	31000	1000 J	12 U	13 U	60 U	14 U	12 U	65 U	54 J	230 J	60 U	610	12 U
4-NITROANILINE	27000	120 U	20 U	24 U	110 U	24 U	21 U	120 U	22 U	29 U	110 U	24 U	22 U
ACENAPHTHENE	110000	380 J	22 U	25 U	120 U	26 U	120 J	7600	4500 D	31 U	310 J	130 J	23 U
ACENAPHTHYLENE	NE	41 J	8.3 J	100 J	15 J	23	630	590 J	450	27 D	28	17 J	37 J
ACETOPHENONE	2000	60 U	10 U	11 U	52 U	12 U	10 U	56 U	11 U	14 U	52 U	12 U	51 J
ANTHRACENE	2400000	960 J	49 J	110 J	130 U	150 J	540	10000	11000 D	90 J	570 J	220	110 J
ATRAZINE	200	190 U	32 U	36 U	160 U	37 U	32 U	180 U	34 U	44 U	160 U	36 U	34 U
BENZALDEHYDE	170000	38 U	6.3 U	7.2 U	33 U	7.4 U	6.3 U	35 U	6.7 U	8.9 U	33 U	7.3 U	6.7 U
BENZO(A)ANTHRACENE	800	***2600***	200	460	580 J	740	***2800 D***	***16000 D***	***16000 D***	***860***	***2300***	780	360
BENZO(A)PYRENE	110	***2200***	***210***	***370***	***540 J***	***680***	***2600 D***	***13000***	***13000 D***	***660***	***2100***	***750***	***370***
BENZO(B)FLUORANTHENE	1100	***2800***	450 J	470	770 J	900	***3600 D***	***17000 D***	***16000 D***	870	***2500***	1000	520
BENZO(G,H,I)PERYLENE	380000000	1500	180	200	400 J	450	1900 D	7800 D	8100 D	300	1400	410	320
BENZO(K)FLUORANTHENE	11000	780 J	87 J	140 J	260 J	310	1300	6700	5400 D	260	1000	310	150 J
BENZYL BUTYL PHTHALATE	230000	150 U	25 U	28 U	130 U	29 U	25 U	140 U	26 U	35 U	130 U	29 U	26 U
BIPHENYL (DIPHENYL)	47000	130 U	440	190 J	110 U	25 U	22 U	430 J	590 J	30 U	110 U	25 U	23 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	320 J	520	56 J	670 J	170 J	280	160 U	31 U	41 U	430 J	33 U	140 J
CAPROLACTAM	12000	730 J	11 U	12 U	55 U	12 U	11 U	59 U	11 U	15 U	55 U	12 U	11 U
CARBAZOLE	24000	140 U	24 U	27 U	120 U	28 U	160 J	5700	3500 J	33 U	120 U	63 J	25 U
CHRYSENE	80000	2500	290	450	740 J	730	2900 D	15000	14000 D	810	2300	870	430
DIBENZ(A,H)ANTHRACENE	110	***420 J***	79 D	86 D	69	78	***530***	***2300 J***	***2300 J***	***130 D***	***420 J***	***140***	100 D
DIBENZOFURAN	73000	270 J	23 U	26 U	120 U	27 U	41 J	3700	4100 D	32 U	120 U	61 J	24 U
DIETHYL PHTHALATE	88000	160 U	27 U	31 U	140 U	32 U	27 U	160 U	29 U	38 U	140 U	32 U	29 U
DIMETHYL PHTHALATE	NE	570 J	240	390	520 J	270	270	500 J	120 J	260	380 *J	420	230
DI-N-BUTYL PHTHALATE	760000	140 U	23 U	26 U	120 U	27 U	23 U	920 J	24 U	32 U	120 U	26 U	24 U
FLUORANTHENE	1300000	5100	370	690	900 J	1000	4900	38000 J	42000 D	1100	3500	1500 J	690
FLUORENE	170000	420 J	22 U	25 U	120 U	26 U	100 J	6400	6400 D	31 U	120 U	120 J	23 U
INDENO(1,2,3-C,D)PYRENE	1100	***1300***	210 D	240 D	240	430	***1700 D***	***7100 D***	***7300 D***	300	***1400***	410	250
ISOPHORONE	200	92 U	15 U	17 U	79 U	18 U	15 U	86 U	16 U	21 U	80 U	18 U	16 U
NAPHTHALENE	3800	1500	260	240	530 J	130 J	49 J	***3900***	3400 J	15 U	57 U	120 J	160 J
N-NITROSODIPHENYLAMINE	400	130 U	21 U	24 U	110 U	47 J	21 U	120 U	22 U	30 U	110 U	24 U	22 U
PENTACHLOROPHENOL	300	7.6 U	1.3 U	1.5 U	6.6 R	7.4 U				1.8 U	6.6 U	7.3 U	7.4 J
PHENANTHRENE	NE	3500	200	310	740 J	630	1800	40000 D	46000 D	310	2000	800	400
PHENOL	8000	67 U	11 U	59 J	58 U	100 J	99 J	62 U	70 J	120 J	58 U	210 J	84 J
PYRENE	840000	4500	260	890	870 J	1100	5000 D	37000 D	37000 D	1100	4000	1600	580

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-56(2-4)-092717	B-57(1-2)-100317	B-57(2-4)-100317	B-58(1-2)-092717	B-58(6-8)-092717	B-59(FILL)-100317	B-59(5-7)-100317	DUP-2-100317 B-59(5-7)	B-59(12-13.5)-100317	B-60(0-1)-092617	B-60(5-7)-092617	B-60(FILL)-092617
SAMPLE DEPTH (FT BGS)		2-4	1-2	2-4	1-2	6-8	-3-0	5-7	5-7	12-13.5	0-1	5-7	-4-0
COLLECTION DATE:		9/27/2017	10/3/2017	10/3/2017	9/27/2017	9/27/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	9/26/2017	9/26/2017	9/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	21 U	40 U	26 U	20 U	20 U	18 U	19 U	37 U	20 U	18 U	19 U	18 U
2-METHYLNAPHTHALENE	8000	12 U	24 U	15 U	130 J	12 U	10 U	11 U	22 U	12 U	11 U	12 U	73 J
2-METHYLPHENOL (O-CRESOL)	310000	18 U	34 U	22 U	17 U	17 U	15 U	16 U	32 U	17 U	16 U	17 U	16 U
2-NITROANILINE	39000	15 U	30 U	19 U	14 U	15 U	13 U	14 U	28 U	14 U	13 U	14 U	14 U
4-METHYLPHENOL (P-CRESOL)	31000	13 U	26 U	17 U	13 U	13 U	11 U	12 U	24 U	13 U	12 U	13 U	12 U
4-NITROANILINE	27000	24 U	46 U	30 U	22 U	23 U	20 U	21 U	43 U	23 U	21 U	22 U	21 U
ACENAPHTHENE	110000	26 U	50 U	32 U	24 U	25 U	22 U	23 U	46 U	24 U	95 J	24 U	110 J
ACENAPHTHYLENE	NE	2.8 J	31 J	2.3 J	15 J	0.35 UJ	17 J	31 J	100 J	2.2 J	26 D	16 J	69 D
ACETOPHENONE	2000	12 U	22 U	14 U	780	11 U	9.8 U	10 U	21 U	11 U	10 U	11 U	10 U
ANTHRACENE	2400000	28 U	180 J	35 U	26 U	27 U	24 U	130 J	180 J	27 U	310	73 J	370
ATRAZINE	200	37 U	71 U	46 U	35 U	35 U	31 U	33 U	66 U	35 U	32 U	34 U	33 U
BENZALDEHYDE	170000	7.3 U	14 U	9.1 U	6.9 U	7 U	6.2 U	6.6 U	13 U	6.9 U	6.4 U	6.9 U	6.5 U
BENZO(A)ANTHRACENE	800	67 D	***1200***	30	190 D	1.1 J	120 D	440 J	***2300 J***	45	***830***	330	***1400***
BENZO(A)PYRENE	110	54 D	***1200***	35	***170 D***	0.69 U	110 D	***470 J***	***2200 J***	26	***660***	***300***	***1300***
BENZO(B)FLUORANTHENE	1100	77 D	***1500***	53	220	0.3 U	170 D	600 J	***2100 J***	31	930	420	***1700***
BENZO(G,H,I)PERYLENE	380000000	32 U	710	40 U	130 J	31 U	53 J	360 J	1200 J	31 U	420	250	1000
BENZO(K)FLUORANTHENE	11000	35 U	460	44 U	64 J	34 U	30 U	210	660	34 U	250	120 J	610
BENZYL BUTYL PHTHALATE	230000	29 U	56 U	36 U	27 U	28 U	24 U	26 U	52 U	27 U	25 U	3600 J	25 UJ
BIPHENYL (DIPHENYL)	47000	25 U	48 U	31 U	24 U	24 U	21 U	23 U	45 U	24 U	22 U	24 U	22 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	200 J	65 U	42 U	43 J	32 U	28 U	30 U	61 U	32 U	29 U	70 J	310 J
CAPROLACTAM	12000	12 U	24 U	15 U	12 U	12 U	10 U	11 U	22 U	12 U	11 U	11 U	11 U
CARBAZOLE	24000	27 U	53 U	34 U	26 U	26 U	23 U	25 U	50 U	26 U	74 J	26 U	120 J
CHRYSENE	80000	64 J	1100	14 U	220	10 U	76 J	460 J	1300 J	10 U	830	350	1400
DIBENZ(A,H)ANTHRACENE	110	9.8 D	***240 D***	0.39 U	37	0.3 U	0.26 U	***130 D***	***460 J***	0.3 U	***130 D***	74 D	***280***
DIBENZOFURAN	73000	26 U	51 U	33 U	25 U	25 U	22 U	24 U	47 U	25 U	70 J	25 U	90 J
DIETHYL PHTHALATE	88000	32 U	61 U	40 U	30 U	31 U	27 U	29 U	57 U	30 U	28 U	30 U	28 U
DIMETHYL PHTHALATE	NE	190 J	210 J	530	380	500	110 J	330	400	450	390	350	390
DI-N-BUTYL PHTHALATE	760000	26 U	51 U	33 U	25 U	25 U	22 U	24 U	47 U	25 U	23 U	25 U	170 J
FLUORANTHENE	1300000	120 J	1800	38 U	220 J	29 U	110 J	780	1100	64 J	1500	510 J	2300
FLUORENE	170000	26 U	50 U	32 U	24 U	25 U	22 U	23 U	46 U	24 U	93 J	24 U	92 J
INDENO(1,2,3-C,D)PYRENE	1100	33 D	730	16	95 D	0.42 U	81 D	310 J	***1200 J***	11	380	220	910
ISOPHORONE	200	18 U	34 U	22 U	17 U	17 U	15 U	16 U	32 U	17 U	16 U	17 U	16 U
NAPHTHALENE	3800	13 U	25 U	16 U	300	12 U	11 U	11 U	23 U	12 U	58 J	44 J	140 J
N-NITROSODIPHENYLAMINE	400	24 U	47 U	30 U	23 U	23 U	21 U	22 U	44 U	23 U	21 U	23 U	22 U
PENTACHLOROPHENOL	300	1.5 U	2.8 U	1.8 UJ	1.4 U	1.4 U	1.2 U	1.3 U	2.7 U	1.4 UJ	1.3 U	1.4 U	1.3 U
PHENANTHRENE	NE	78 D	630	41	150 D	0.33 U	78 D	520	390	24	1300	340	1600
PHENOL	8000	62 J	25 U	16 U	12 U	58 J	11 U	12 U	23 U	47 J	44 J	49 J	48 J
PYRENE	840000	110 J	1900	39 U	180 J	30 U	130 J	870	1200	74 J	1600	580	2400

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-61(0-1)-101117	B-61(5-6)-101117	B-62(0-1)-101117	B-62(5-5.5)-101117	B-63(0-1)-101117	B-63(1-3)-101117	B-64(1.5-2.5)-101117	DUP-5-101117	B-64(1.5-2.5)	B-64(2.5-4.5)-101117	B-65(0.5-1.5)-101317	B-65(1.5-2.7)-101317
SAMPLE DEPTH (FT BGS)		0-1	5-6	0-1	5-5.5	0-1	1-3	1.5-2.5	1.5-2.5		2.5-4.5	0.5-1.5	1.5-2.7
COLLECTION DATE:		10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017		10/11/2017	10/13/2017	10/13/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result		Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	19 U	19 U	18 U	19 U	18 U	92 U	19 U	19 U		19 U	19 U	19 U
2-METHYLNAPHTHALENE	8000	54 J	11 U	11 U	77 J	11 U	330 J	11 U	11 U		11 U	11 U	11 U
2-METHYLPHENOL (O-CRESOL)	310000	16 U	16 U	16 U	17 U	16 U	78 U	16 U	16 U		16 U	16 U	16 U
2-NITROANILINE	39000	14 U	14 U	13 U	14 U	14 U	67 U	14 U	14 U		14 U	14 U	14 U
4-METHYLPHENOL (P-CRESOL)	31000	12 U	12 U	12 U	13 U	12 U	59 U	12 U	12 U		12 U	12 U	12 U
4-NITROANILINE	27000	21 U	21 U	21 U	22 U	21 U	110 U	21 U	21 U		22 U	22 U	61 J
ACENAPHTHENE	110000	23 U	23 U	56 J	24 U	95 J	2400	23 U	69 J		24 U	24 U	23 U
ACENAPHTHYLENE	NE	7.3 J	15 J	23	13 J	38	32	110	130		26	9.4 J	26
ACETOPHENONE	2000	10 U	10 U	10 U	11 U	10 U	51 U	10 U	10 U		11 U	11 U	11 U
ANTHRACENE	2400000	25 U	110 J	140 J	26 U	250	5200	140 J	280		26 U	26 U	39 J
ATRAZINE	200	33 U	33 U	32 U	34 U	33 U	160 U	33 U	33 U		34 U	34 U	33 U
BENZALDEHYDE	170000	6.5 U	6.5 U	6.5 U	6.9 U	6.5 U	32 U	6.6 U	45 J		46 J	6.7 U	6.6 U
BENZO(A)ANTHRACENE	800	150	600	580	140	***1000***	***8900***	560 J	***970 J***		130	71	120
BENZO(A)PYRENE	110	***120***	***560***	***570***	110	***1100***	***7300***	***540***	***910***		***200***	77	***150***
BENZO(B)FLUORANTHENE	1100	200	820	800	210	***1600***	***9700 D***	740 J	***1300 J***		310	140	220
BENZO(G,H,I)PERYLENE	3800000000	96 J	390	400	170 J	750	4200	390	610		240	78 J	140 J
BENZO(K)FLUORANTHENE	11000	63 J	260	280	79 J	530 J	3300	240	380		98 J	33 U	61 J
BENZYL BUTYL PHTHALATE	230000	26 U	26 U	50 J	220	430 J	130 U	75 J	26 U		27 U	26 U	26 U
BIPHENYL (DIPHENYL)	47000	22 U	22 U	22 U	23 U	22 U	110 U	23 U	22 U		23 U	23 U	23 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	7100 D	220	380	780 J	380 J	150 U	130 J	120 J		100 J	710	30 U
CAPROLACTAM	12000	11 U	11 U	11 U	11 U	11 U	54 U	11 U	11 U		11 U	11 U	11 U
CARBAZOLE	24000	25 U	110 J	110 J	26 U	140 J	2100	45 J	93 J		25 U	25 U	25 U
CHRYSENE	80000	180 J	720	650	190	1100	8900	570 J	960 J		210	110 J	130 J
DIBENZ(A,H)ANTHRACENE	110	20	65	65	19	***200***	***1200***	***120 J***	***190***		36	17 J	26
DIBENZOFURAN	73000	23 U	23 U	23 U	25 U	39 J	1400	24 U	23 U		24 U	24 U	24 U
DIETHYL PHTHALATE	88000	28 U	28 U	28 U	30 U	28 U	140 U	29 U	66 J		29 U	29 U	29 U
DIMETHYL PHTHALATE	NE	160 J	150 J	190	190	140 J	200 J	590	590		610	420	620
DI-N-BUTYL PHTHALATE	760000	890 J	270	900	21000 D	4400 D	4100	180 J	180 J		98 J	51 J	720
FLUORANTHENE	1300000	250 J	1300	1100	310 J	2200 D	24000	820	1500		160 J	100 J	120 J
FLUORENE	170000	23 U	23 U	52 J	24 U	85 J	2700	45 J	82 J		24 U	24 U	23 U
INDENO(1,2,3-C,D)PYRENE	1100	73	380	360	71	690	***4000***	280	590		190	58	94
ISOPHORONE	200	***560 J***	16 U	16 U	17 U	16 U	78 U	16 U	16 U		16 U	16 U	16 U
NAPHTHALENE	3800	77 J	11 U	11 U	140 J	11 U	640 J	11 U	11 U		12 U	12 U	12 U
N-NITROSODIPHENYLAMINE	400	22 U	22 U	22 U	23 U	22 U	110 U	22 U	22 U		23 U	22 U	22 U
PENTACHLOROPHENOL	300	6.6 U	6.6 U	6.5 U	6.9 U	6.5 U	6.5 U	6.6 U	6.6 U		6.8 U	6.8 U	6.7 U
PHENANTHRENE	NE	210	750	720	130	1100	20000 D	460	830		75	84	130
PHENOL	8000	94 J	83 J	130 J	210 J	94 J	57 U	150 J	150 J		170 J	110 J	190 J
PYRENE	840000	260	1000	1200	330	2000 D	17000 D	980	1600		240	140 J	150 J

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-66(1.5-2.5)-101017	B-66(2.5-4.5)-101017	B-67(1.5-2.5)-101017	B-67(2.5-3.8)-101017	B-68(1-2)-102417	B-69(0-1)-092717	B-69(1-3)-092717	B-70(0-1)-092717	B-70(5-7)-092717	B-71(3-5)-101617	B-74(0-1)-100417	B-74(3-4)-100417
SAMPLE DEPTH (FT BGS)		1.5-2.5	2.5-4.5	1.5-2.5	2.5-3.8	1-2	0-1	1-3	0-1	5-7	3-5	0-1	3-4
COLLECTION DATE:		10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/24/2017	9/27/2017	9/27/2017	9/27/2017	9/27/2017	10/16/2017	10/4/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/kg)													
2,4-DIMETHYLPHENOL	1000	18 U	20 U	92 U	21 U	22 U	18 U	18 U	18 U	100 U	20 U	86 U	1100 J-
2-METHYLNAPHTHALENE	8000	11 U	12 U	54 U	1400 J	13 U	11 U	10 U	11 U	61 U	12 U	51 UJ	12 U
2-METHYLPHENOL (O-CRESOL)	310000	16 U	17 U	78 U	150 J	18 U	15 U	15 U	15 U	88 U	17 U	74 U	17 U
2-NITROANILINE	39000	14 U	14 U	67 U	16 U	16 U	13 U	13 U	13 U	76 U	15 U	64 U	15 UJ
4-METHYLPHENOL (P-CRESOL)	31000	65 J	13 U	59 U	550 J	14 U	12 U	11 U	12 U	67 U	13 U	56 U	13 U
4-NITROANILINE	27000	21 U	23 U	110 U	24 U	25 U	20 U	20 U	21 U	120 U	23 U	99 U	23 U
ACENAPHTHENE	110000	23 U	24 U	110 U	26 U	27 U	22 U	22 U	22 U	130 U	92 J	110 U	58 J
ACENAPHTHYLENE	NE	19	36	28	62	1.9 U	14 J	9.6 J	12 J	22 J	1.8 U	43	24
ACETOPHENONE	2000	10 U	57 J	51 U	12 U	12 U	10 U	96 J	10 U	58 U	11 U	48 U	260 J
ANTHRACENE	2400000	57 J	85 J	120 U	220	29 U	58 J	55 J	24 U	760 J	170 J	120 U	27 U
ATRAZINE	200	33 U	35 U	160 U	37 U	38 U	31 U	31 U	32 U	180 U	36 U	150 U	35 U
BENZALDEHYDE	170000	47 J	6.9 U	32 U	7.5 U	7.6 U	6.3 U	6.2 U	76 J	36 U	7.1 U	31 U	7 U
BENZO(A)ANTHRACENE	800	440	500	250	540 J	45	200	250	120 D	2000	350 J	500 J	25
BENZO(A)PYRENE	110	600	560	230	320	34	200 D	230	100 D	1600	280	510 J	35
BENZO(B)FLUORANTHENE	1100	800	760	320 J	620 J	45	260	350	160 D	2300	380	750 J	50
BENZO(G,H,I)PERYLENE	380000000	490	400	140 U	210	34 U	210	210	83 J	890 J	140 J	470 J	31 U
BENZO(K)FLUORANTHENE	11000	270	270	160 U	190 J	37 U	70 J	110 J	30 U	860 J	110 J	240 J	34 U
BENZYL BUTYL PHTHALATE	230000	25 U	27 U	130 U	29 U	30 U	25 U	24 U	25 U	140 U	28 U	120 U	27 U
BIPHENYL (DIPHENYL)	47000	22 U	24 U	110 U	150 J	25 U	22 U	21 U	22 U	120 U	24 U	100 U	24 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	75 J	32 U	330 J	99 J	35 U	1900	350	130 J	170 U	33 U	16000 D	890
CAPROLACTAM	12000	11 U	12 U	54 U	12 U	13 U	10 U	10 U	11 U	61 U	12 U	51 U	2000 J-
CARBAZOLE	24000	24 U	26 U	120 U	28 U	29 U	24 U	23 U	24 U	300 J	27 U	110 U	26 U
CHRYSENE	80000	560	650	280 J	670 J	71 J	210	290	97 J	1800	430 J+	480 J	10 U
DIBENZ(A,H)ANTHRACENE	110	99	100	44	48	1.6 U	40 D	55 D	25	300 J	24	120	1.5 U
DIBENZOFURAN	73000	23 U	25 U	120 U	27 U	27 U	23 U	22 U	23 U	130 U	25 U	110 U	25 U
DIETHYL PHTHALATE	88000	28 U	30 U	140 U	32 U	33 U	27 U	27 U	27 U	160 U	31 U	130 U	30 U
DIMETHYL PHTHALATE	NE	570	830	130 U	190 J	260	330	280	260	340 J	410	520 J	720
DI-N-BUTYL PHTHALATE	760000	2100	2300	120 U	15000 D	27 U	23 U	22 U	23 U	130 U	26 U	3400	25 U
FLUORANTHENE	1300000	640 J	1000 J	500 J	1600	130 J	360	460	150 J	4100	870 J+	670 J	29 U
FLUORENE	170000	23 U	24 U	110 U	800 J	27 U	22 U	22 U	22 U	280 J	94 J	110 U	24 U
INDENO(1,2,3-C,D)PYRENE	1100	450	390	140	140	19 J	130 D	180 D	72 D	920 J	75	420 J	30
ISOPHORONE	200	16 U	17 U	78 U	18 U	18 U	15 U	15 U	15 U	88 U	17 U	220 J	17 U
NAPHTHALENE	3800	11 U	48 J	56 U	5400 D	13 U	11 U	53 J	11 U	63 U	12 U	53 U	12 U
N-NITROSODIPHENYLAMINE	400	22 U	23 U	110 U	25 U	25 U	21 U	21 U	21 U	120 U	24 U	100 U	23 UJ
PENTACHLOROPHENOL	300	6.5 U	7 U	6.5 U	7.5 U	7.7 U	1.3 U	6.2 U	1.3 U	1.5 U	7.1 U	6.1 U	7 U
PHENANTHRENE	NE	210	500	270	770 J	55	210	240	120 D	3100	930	240	64
PHENOL	8000	110 J	250 J	57 U	180 J	94 J	42 J	11 U	11 U	64 U	160 J	53 U	12 U
PYRENE	840000	560	1200	440 J	1700 J	140 J	320	380	170 J	3100	820 J+	700 J	52 J

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		B-75(0-1)-092917	B-75(1-3)-092917	B-76(0-1)-102317	B-76(1-3)-102317	DUP-7-102317	B-76(1-3)	B-77(0-1)-092817	B-77(1-3)-092817	DUP-1-092817	B-77(1-3)	B-78(0.5-1.5)-102517	B-78(5-7)-102517	B-79(1-2)-102617	B-79(5-6)-102617
SAMPLE DEPTH (FT BGS)		0-1	1-3	0-1	1-3	1-3		0-1	1-3	1-3		0.5-1.5	5-7	1-2	5-6
COLLECTION DATE:		9/29/2017	9/29/2017	10/23/2017	10/23/2017	10/23/2017		9/28/2017	9/28/2017	9/28/2017		10/25/2017	10/25/2017	10/26/2017	10/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result		Result	Result	Result		Result	Result	Result	Result
SVOCs (ug/kg)															
2,4-DIMETHYLPHENOL	1000	18 U	21 U	19 U	19 U	22 U		18 U	18 U	18 U		20 U	52 U	19 U	19 U
2-METHYLNAPHTHALENE	8000	10 U	13 U	41 J	11 U	13 U		10 U	10 U	11 U		12 U	31 U	350	75 J
2-METHYLPHENOL (O-CRESOL)	310000	15 U	18 U	16 U	16 U	19 U		15 U	15 U	15 U		17 U	44 U	16 U	16 U
2-NITROANILINE	39000	13 U	16 U	14 U	14 U	16 U		13 U	13 U	13 U		14 U	38 U	14 U	14 U
4-METHYLPHENOL (P-CRESOL)	31000	11 U	14 U	12 U	12 U	14 U		11 U	11 U	12 U		13 U	3100	12 U	12 U
4-NITROANILINE	27000	20 U	25 U	22 U	22 U	25 U		20 U	20 U	20 U		23 U	60 U	22 U	22 U
ACENAPHTHENE	110000	22 U	27 U	130 J	24 U	27 U		55 J	36 J	60 J		59 J	440 J	150 J	67 J
ACENAPHTHYLENE	NE	9.5 J	0.38 UJ	37	24 J	220		270 J	19 D	33 D		11 J	28	1.7 U	1.7 U
ACETOPHENONE	2000	9.8 U	12 U	11 U	11 U	12 U		9.8 U	9.8 U	9.9 U		11 U	29 U	11 U	11 U
ANTHRACENE	2400000	24 U	29 U	430	52 J	130 J		540 J	110 J	190		140 J	590	26 U	25 U
ATRAZINE	200	31 U	38 U	34 U	34 U	39 U		31 U	31 U	31 U		35 U	92 U	34 U	33 U
BENZALDEHYDE	170000	6.2 U	7.6 U	6.7 U	6.7 U	7.7 U		6.2 U	6.2 U	6.3 U		6.9 U	18 U	6.8 U	6.6 U
BENZO(A)ANTHRACENE	800	120 D	0.66 U	***2100***	320 J	***850 J***		***2000 D***	390	690		520	***1700***	40	26
BENZO(A)PYRENE	110	***120 D***	0.74 U	***1800***	***370 J***	***1600 J***		***1600 D***	***330***	***550***		***440***	***1500***	3.3 U	3.2 U
BENZO(B)FLUORANTHENE	1100	190 D	0.32 U	***2400 D***	470 J	***2200 J***		***2000 D***	430	770		600	***1900***	34	22
BENZO(G,H,I)PERYLENE	380000000	89 J	33 U	1100	270 J	1200 J		910 D	190	290		250	930	30 U	29 U
BENZO(K)FLUORANTHENE	11000	30 U	37 U	780	160 J	620 J		1800	160 J	230		180 J	640	33 U	32 U
BENZYL BUTYL PHTHALATE	230000	45 J	30 U	26 U	26 U	30 U		47 J	24 U	25 U		27 U	72 U	27 U	26 U
BIPHENYL (DIPHENYL)	47000	21 U	26 U	23 U	23 U	26 U		21 U	21 U	21 U		24 U	63 U	23 U	23 U
BIS(2-ETHYLHEXYL) PHTHALATE	35000	76 J	1900	31 U	31 U	35 U		52 J	28 U	29 U		32 U	84 U	100 J	120 J
CAPROLACTAM	12000	10 U	13 U	11 U	11 U	13 U		10 U	10 U	10 U		12 U	31 U	11 U	11 U
CARBAZOLE	24000	23 U	28 U	100 J	25 U	80 J		35 J	23 U	38 J		50 J	170 J	25 U	25 U
CHRYSENE	80000	91 J	11 U	2500	360 J	1100 J		1800 D	380	630		500	1800	67 J	9.9 U
DIBENZ(A,H)ANTHRACENE	110	30	0.32 U	***230***	45 J	***370***		***280 J***	57 J	110 J		56	***200***	1.4 U	1.4 U
DIBENZOFURAN	73000	22 U	27 U	88 J	24 U	44 J		45 J	22 U	22 U		25 U	160 J	75 J	24 U
DIETHYL PHTHALATE	88000	27 U	33 U	29 U	29 U	33 U		27 U	27 U	27 U		30 U	79 U	29 U	29 U
DIMETHYL PHTHALATE	NE	260	560	530	210	340		110 J	180	180		250	290 J	230	330
DI-N-BUTYL PHTHALATE	760000	22 U	27 U	24 U	24 U	28 U		22 U	22 U	22 U		25 U	66 U	24 U	24 U
FLUORANTHENE	1300000	130 J	32 U	3600 D	440	990		4300 D	850	1400		780	3400	270 J	100 J
FLUORENE	170000	22 U	27 U	110 J	24 U	27 U		51 J	22 U	51 J		24 U	390 J	230	93 J
INDENO(1,2,3-C,D)PYRENE	1100	93 D	0.45 U	1100	250 J	1100 J		810 J	190	280		260	870	9.4 J	7.4 J
ISOPHORONE	200	15 U	18 U	16 U	16 U	19 U		15 U	15 U	15 U		17 U	44 U	16 U	16 U
NAPHTHALENE	3800	11 U	13 U	68 J	12 U	76 J		11 U	11 U	11 U		12 U	320 J	270	12 U
N-NITROSODIPHENYLAMINE	400	21 U	25 U	22 U	22 U	26 U		21 U	21 U	21 U		23 U	61 U	23 U	22 U
PENTACHLOROPHENOL	300	1.2 U	1.5 U	6.7 U	6.8 U	7.7 U			1.2 U	1.3 U		7 U	9.2 U	6.8 U	6.7 U
PHENANTHRENE	NE	120 D	40	2500	240	470		2000 D	490	840		550	2800	900	300
PHENOL	8000	45 J	13 U	110 J	41 J	120 J		74 J	65 J	72 J		88 J	680 J	93 J	85 J
PYRENE	840000	120 J	32 U	3700 D	600 J	1400 J		3300 D	630 J	1200 J		810	3500	250	120 J

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-3(1-2)-102517	B-3(2-3)-102517	B-4(0-1)-100617	B-4(1-3)-100617	B-5(0.5-1.5)-101317	B-5(5-6.5)-101317	B-6(3.5-4.5)-101717	B-6(5-5.5)-101717	B-7(0.5-1.5)-101017	B-7(5-6)-101017	B-8(1.5-2.5)-101017
SAMPLE DEPTH (FT BGS)		1-2	2-3	0-1	1-3	0.5-1.5	5-6.5	3.5-4.5	5-5.5	0.5-1.5	5-6	1.5-2.5
COLLECTION DATE:		10/25/2017	10/25/2017	10/6/2017	10/6/2017	10/13/2017	10/13/2017	10/17/2017	10/17/2017	10/10/2017	10/10/2017	10/10/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)												
ALUMINUM	6000000	2900000	3890000	4230000	3630000	3530000	2670000	4840000	6280000	5000000	3270000	5440000
ANTIMONY	6000	2400	800 U	2600	3400	1000	780 U	800 U	770 U	790U	800 U	840 U
ARSENIC	680	5300	2500	7300	12600	4800	2200	2000 *J-	2700 *J-	3700	4600	2600
BARIUM	2100000	236000	32900	617000	847000	87300	40100	358000	67500	305000	46400	51800
BERYLLIUM	700	430 U	400 U	350 J	390 U	410 U	390 U	400 U	480U	400U	400 U	420 U
CADMIUM	2000	1800	400 U	1700	2200	410 U	390 U	68 J	610	520	130 J	1500
CALCIUM	NE	3310000	739000	22000000	12100000	8570000	6590000	1260000	1480000	2550000	1680000	5040000
CHROMIUM, TOTAL	NE	18700	5600	36100	40500	9300	5900	29100	9000	16200	9700	12400
COBALT	23000	3700	3800	6500	4900	4500	3300	4200	5600	5500	3800	6100
COPPER	3100000	60500	23000	238000	92100	55600	30300	72200	39700	34100	30700	62800
IRON	55000000	6210000	7580000	16600000	12300000	8010000	5500000	6680000	9190000	10400000	13300000	12900000
LEAD	90000	620000 D	9900	650000 D	1070000 D	254000	77700	298000	255000	273000	24100	71600
MAGNESIUM	NE	1540000	1090000	3970000	1510000	1640000	1000000	1260000	1600000	2410000	1050000	2400000
MANGANESE	65000	143000	245000	286000	290000	403000	495000	338000	499000	396000	324000	373000
NICKEL	48000	10400	5900	16900	10900	9500	6400	7400	13400	12300	10100	12600
POTASSIUM	NE	257000	299000	408000	345000	465000	309000	528000	454000	856000	393000	265000
SELENIUM	11000	2100 U	320 U	2000 U	700 J	330 U	310 U	320 U	310 U	320 U	320 U	2100 U
SILVER	1000	430 U	400 U	410 U	390 U	410 U	390 U	400 U	380 U	400 U	400 U	510
SODIUM	NE	214000 U	200000 U	215000U	194000U	606000	553000	400000	781000	198000 *U	200000 *U	210000 *U
THALLIUM	780	430 U	400 U	410 U	390 U	410 U	390 U	400 U	380 U	400 U	400 U	420 U
VANADIUM	78000	11400	8500	14900	15200	8500	6400	9500	10900	15200	11300	14500
ZINC	930000	1750000 D	105000	630000	1500000 D	195000	64100	102000	376000	259000	86600	134000
CYANIDE	20000	64 U	58 U	570	560	150 J	57 U	61 U	58 U	650	270 J	60 U
MERCURY	100	410	42 J	1200	1400	270	77 J	20 J	190	450 J-	59 J	61 J
CHROMIUM, HEXAVALENT	300	460 U	510	3400 J	510 J	1300 J	430 UJ	2900	1000	2500	1300	2400 J
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

* - Outside QC Limits

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

J+ - The result is an estimated quantity, and the result may be biased high.

J- - The result is an estimated quantity, and the result may be biased low.

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE 3-4

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-8(5-6.25)-101017	B-9(0-1)-101617	B-9(5-6)-101617	B-10(3-5)-101617	B-12(0-1)-101317	B-12(1-3)-101317	B-13(0-1)-101117	B-13(1-3)-101117	B-14(0-1)-101717	B-14(7-7.5)-101717	B-15(0.25-1.25)-101717
SAMPLE DEPTH (FT BGS)		5-6.25	0-1	5-6	3-5	0-1	1-3	0-1	1-3	0-1	7-7.5	0.25-1.25
COLLECTION DATE:		10/10/2017	10/16/2017	10/16/2017	10/16/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/17/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)												
ALUMINUM	6000000	4630000	5280000	*7730000*	*10200000*	2950000	2150000	5060000	4390000	*10200000*	2110000	5140000
ANTIMONY	6000	810 U	3000	1600	880 U	3400	1800	3700	1900	120 J	800 U	2000
ARSENIC	680	*1600*	*3800*	*6400*	*7400 *J-*	*15300*	*13500*	*3900*	*10100*	*2000 *J-*	*740 *J-*	*10000 *J-*
BARIUM	2100000	58600	449000	215000	83600	525000	315000	82400	316000	51900	20200	331000
BERYLLIUM	700	400 U	410 U	470 U	*820*	420 U	420 U	410 U	390U	390 U	400 U	450U
CADMIUM	2000	140 J	*8800*	1400	1200	*2300*	1800	190 J	720	140 J	36 U	900
CALCIUM	NE	5720000	5430000	42100000	8950000	2930000	5750000	53800000	3180000	18700000	489000	3130000
CHROMIUM, TOTAL	NE	8200	38300	25300	58600	41900	20300	14700	21500	39400	5100	24800
COBALT	23000	4500	7700	6000	12000	3800	3700	3600	3200	15600	2700	6100
COPPER	3100000	26600	55900	41500	85400	188000	134000	34100	127000	78800	8100	47300
IRON	55000000	8450000	11400000	17200000	17200000	7830000	6900000	8120000	9440000	23100000	5090000	11900000
LEAD	90000	40800	*571000 D*	*925000 D*	*211000*	*2000000 D*	*578000 D*	*171000*	*1390000 D*	33900	1900	*545000 D*
MAGNESIUM	NE	2260000	2180000	4940000	6670000	2010000	976000	4840000	1850000	11800000	856000	1360000
MANGANESE	65000	*249000*	*373000*	*664000*	*1190000 D*	63000	*448000*	*179000*	*111000*	*488000*	*113000*	*1010000 D*
NICKEL	48000	9800	14500	18500	*51000*	13000	11400	10100	12000	28200	5100	11300
POTASSIUM	NE	519000	681000	711000	935000	285000	210000 U	587000	312000	456000	199000 U	383000
SELENIUM	11000	320 U	2000 U	2400 U	2200 U	330 U	340 U	330 U	590 J	310 U	320 U	2000 U
SILVER	1000	400 U	1000	470 U	920	690	460U	410U	390 U	390 U	400 U	410 U
SODIUM	NE	202000 *U	203000U	482000	1300000	217000U	210000 U	362000	631000	417000	199000 U	522000
THALLIUM	780	400 U	410 U	470 U	440 U	120 U	--	410 U	390 U	390 U	13 U	410 U
VANADIUM	78000	10700	15400	14000	19500	17500	12000	14300	20100	44100	6800	18700
ZINC	930000	51100	608000	361000	440000	677000	585000	74900	340000	68900	14300	390000
CYANIDE	20000	56 U	2000	68 U	67 U	420 J	190 J	77 J	90 J	57 U	58 U	63 J
MERCURY	100	*120 J-*	*690*	*11900 D*	*270*	*2000*	*300*	*220*	*1200*	47 J	4 U	*590*
CHROMIUM, HEXAVALENT	300	*650*	*41000 J*	510 U	*4700*	440 UJ	*630 J*	*1400*	*5000*	*630*	420 U	*2700*
IRON, FERROUS	NE	--	1 J-	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-15(5-6)-101717	B-16(0-1)-101217	B-16(7-7.75)-101217	B-17(0.25-1.25)-101717	B-17(5-6.5)-101717	DUP-6-101717 B-17(5-6.5)	B-18(0-1)-101217	B-18(5-6)-101217	B-19(0-1)-101117	B-19(2-4)-101117
SAMPLE DEPTH (FT BGS)		5-6	0-1	7-7.75	0.25-1.25	5-6.5	5-6.5	0-1	5-6	0-1	2-4
COLLECTION DATE:		10/17/2017	10/12/2017	10/12/2017	10/17/2017	10/17/2017	10/17/2017	10/12/2017	10/12/2017	10/11/2017	10/11/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	5570000	5040000	1320000	***6060000***	3990000	4790000	4000000	2260000	5770000	4480000
ANTIMONY	6000	860U	1900	810 U	800 U	840 U	860 U	2600	840 U	2300	1700
ARSENIC	680	***6300 *J-***	***6100***	400 U	***2700 *J-***	***3800 *J-***	***5100 *J-***	***4000***	***2400***	***15200***	***6900***
BARIUM	2100000	246000	90900	9600	91400	36700	31600	155000	72400	163000	1250000
BERYLLIUM	700	440U	420 U	400 U	400 U	420 U	430 U	410 U	420 U	410U	400 U
CADMIUM	2000	520	740	36 U	680	170 J	170 J	1600	130 J	880	550
CALCIUM	NE	2030000	2680000	215000	10500000	3070000	2380000	22700000	1880000	37400000	28800000
CHROMIUM, TOTAL	NE	17200	30200	2300	16800	7600	9300	25200	5600	28500	28900
COBALT	23000	6200	7500	1200	6700	4500	4400	6600	1700	10200	4200
COPPER	3100000	35000	422000	4200	85600	40200	44000	55200	61200	170000	58700
IRON	55000000	12300000	18100000	2470000	12800000	8540000	10800000	25500000	5770000	14500000	9420000
LEAD	90000	***310000***	***435000 D***	1400	***222000***	72600	62000	***302000***	***156000***	***622000 D***	***1190000 D***
MAGNESIUM	NE	1650000	4450000	414000	3300000	1340000	1550000	3990000	669000	5610000	7900000
MANGANESE	65000	***676000***	***129000***	20600	***272000***	***148000***	***136000***	***255000***	***95900***	***262000***	***304000***
NICKEL	48000	11200	27200	2800	19300	9400	10800	17000	3700	***79800***	9000
POTASSIUM	NE	357000	230000	201000 U	504000	418000	477000	757000	209000 U	535000	486000
SELENIUM	11000	2000 U	440 J	320 U	2000 U	340 U	2200 U	340 J	340 U	330 U	320 U
SILVER	1000	400 U	580	400 U	780	420 U	430 U	510	420 U	***3100***	400 U
SODIUM	NE	484000	470000	201000 U	706000	666000	788000	1010000	209000 U	261000 *J	255000
THALLIUM	780	400 U	420 U	13 U	400 U	420 U	430 U	410 U	420 U	410 U	400 U
VANADIUM	78000	20100	36600	3200	20100	15300	24000	18000	6500	17000	12700
ZINC	930000	314000	361000	12300	198000	142000	201000	629000	242000	428000	***2310000 D***
CYANIDE	20000	58 U	150 J	57 U	82 J	130 J	62 U	410 J	61 U	400 J	980
MERCURY	100	40 J	***280***	4 U	***240***	97 J	***120***	***650***	***340***	***330***	***350***
CHROMIUM, HEXAVALENT	300	***730***	***6800***	430 U	***1500***	***650***	--	***3900***	***1300***	***2100***	***20600***
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-2C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-20(3.5-4)-101817	B-20(5-6)-101817	B-22(0-1)-100617	B-22(1-3)-100617	B-23(0-1)-100517	B-23(1-3)-100517	B-24(0.5-1.5)-100517	B-24(1.5-3.5)-100517	DUP-3-100517 B-24(1.5-3.5)	B-25(0.5-1.5)-100517
SAMPLE DEPTH (FT BGS)		3.5-4	5-6	0-1	1-3	0-1	1-3	0.5-1.5	1.5-3.5	1.5-3.5	0.5-1.5
COLLECTION DATE:		10/18/2017	10/18/2017	10/6/2017	10/6/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	***9640000***	***11700000***	3960000	3850000	4690000	3810000	***6090000***	1440000	1370000	4880000
ANTIMONY	6000	840 U	830 U	1200	750 U	4300	1800	1700	2300	2200	770 U
ARSENIC	680	***6800***	***3500***	***7100***	***3200***	***5700***	***7700***	***10800***	***56800***	***49300***	***2800***
BARIUM	2100000	122000	84500	528000	75100	135000	429000	106000	236000	244000	57300
BERYLLIUM	700	550 J	630 J	400 U	380 U	460U	810 *U	390 U	410 U	430 U	390 U
CADMIUM	2000	560	280 J	970	190 J	940	770	900	410 U	39 U	720
CALCIUM	NE	4380000	18200000	7400000	8600000	27300000	5200000	8990000	766000	865000	7630000
CHROMIUM, TOTAL	NE	14000	13100	14500	6700	27600	21300	20500	11400	11100	7900
COBALT	23000	7400	8200	3900	3700	5200	5100	7400	1400	1500	7200
COPPER	3100000	71500	42300	53000	29200	60500	63300	68800	32500	32900	40400
IRON	55000000	17300000	15200000	10200000	6620000	11400000	12800000	19700000	40500000	33600000	10800000
LEAD	90000	***294000***	88700	***482000 D***	***122000***	***243000***	***350000***	***205000***	***420000 D***	***458000 D***	32400
MAGNESIUM	NE	2090000	2710000	2270000	1590000	5150000	1210000	6400000	552000	566000	2940000
MANGANESE	65000	***471000***	***874000 D***	***247000***	***359000***	***396000***	***311000***	***234000***	28000	25300	***262000***
NICKEL	48000	13200	13700	9600	6900	16300	10500	***48600***	5400	6500	14500
POTASSIUM	NE	494000	543000	284000	311000	547000	335000	442000	1360000	1120000	376000
SELENIUM	11000	2100 U	2100 U	400 J	380 U	480 J	500 J	1900 U	5800	5000	1900 U
SILVER	1000	420 U	410 U	400 U	380 U	380 U	410 U	390 U	410 U	430 U	390 U
SODIUM	NE	833000	725000	143000U	113000U	228000U	230000U	501000 *U	1450000 *U	1050000 *U	256000 *U
THALLIUM	780	420 U	410 U	400 U	380 U	380 U	410 U	390 U	410 U	430 U	390 U
VANADIUM	78000	24100	20700	12300	10400	11700	17500	***400000 D***	38300 J	***106000 J***	46300
ZINC	930000	451000	142000	722000	135000	481000	456000	127000	74000	50200	84400
CYANIDE	20000	64 U	62 U	510 U	510 U	510 U	550 U	500 U	560 U	570 U	520 U
MERCURY	100	***720***	62 J	***460***	***230***	***400***	***470***	***270***	***1400***	***1400***	***150***
CHROMIUM, HEXAVALENT	300	***1400***	***970***	***1200 J***	***840 J***	***1000 J***	***1700 J***	***660***	***3700 J***	--	***890***
IRON, FERROUS	NE	---	---	---	---	---	---	---	---	---	---

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-25(5-5.5)-100517	B-26(0.5-1.5)-100517	B-26(5-5.8)-100517	B-27(0.5-1.5)-100517	B-27(5-5.5)-100517	B-28(0.5-1.5)-100917	B-28(1.5-2.75)-100917	B-29(0-1)-092917	B-29(1-3)-092917	B-30(0-1)-100417
SAMPLE DEPTH (FT BGS)		5-5.5	0.5-1.5	5-5.8	0.5-1.5	5-5.5	0.5-1.5	1.5-2.75	0-1	1-3	0-1
COLLECTION DATE:		10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/9/2017	10/9/2017	9/29/2017	9/29/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	4090000	3280000	4000000	4530000	4060000	3030000	4770000	5640000	5420000	4330000
ANTIMONY	6000	1200	3800	2400	1500	1500	1000	2300	2400	2100	5300
ARSENIC	680	***4400***	***10100***	***9300***	***6000***	***5500***	***3500***	***10500***	***4500***	***5200***	***19900***
BARIUM	2100000	148000	***2420000 D***	959000	390000	195000	152000	299000	310000	317000	816000
BERYLLIUM	700	650	***940***	510	400 U	440 U	230 J	500 U	310 J	300 J	420 U
CADMIUM	2000	680	***4300***	***3000***	400U	440 U	400U	1100	***2700***	***3400***	***4000***
CALCIUM	NE	10400000	10100000	12600000	2920000	5210000	14400000	19500000	9830000	10700000	3870000
CHROMIUM, TOTAL	NE	12100	29900	22000	11300	9600	15400	34800	68400	49300	50700
COBALT	23000	9300	7000	4700	4300	4900	8600	18600	15000	16000	22300
COPPER	3100000	89200	222000	115000	59500	130000	101000	137000	137000	150000	316000
IRON	55000000	9490000	8560000	9450000	10100000	11900000	4920000	15700000	15600000	14000000	15000000
LEAD	90000	***427000 D***	***1510000 D***	***831000 D***	***421000 D***	***213000***	***375000***	***643000 D***	***802000 D***	***851000 D***	***3700000 D***
MAGNESIUM	NE	1360000	3090000	5010000	1270000	1640000	1530000	2250000	4690000	6130000	965000
MANGANESE	65000	***177000***	***219000***	***252000***	***229000***	***283000***	***122000***	***290000***	***234000***	***269000***	***2080000 D***
NICKEL	48000	18700	12600	12900	8700	9600	6800	16600	22600	22800	20200
POTASSIUM	NE	523000	233000	283000	278000	362000	341000	556000	598000	403000	374000
SELENIUM	11000	2000 U	2200 U	2200 U	2000 U	220 U	480 J	1100 J	2200 U	2000 U	2100U
SILVER	1000	400 U	450 U	440 U	400 U	440 U	400 U	550	430 U	410 U	630
SODIUM	NE	143000 *U	116000 *U	98400 *U	100000 *U	125000 *U	307000	518000	320000	310000	120000U
THALLIUM	780	400 U	450 U	440 U	400 U	440 U	400 U	500 U	430 U	410 U	420 U
VANADIUM	78000	14900	18800	16200	13100	14600	13000	31100	19300	19900	25000
ZINC	930000	408000	***6480000 D***	***1420000 D***	307000	162000	184000	442000	619000	809000	***1680000 D***
CYANIDE	20000	56 U	570 U	560 U	540 U	590 U	83 J	440 J	580	390 J	1000
MERCURY	100	***12300 D***	***210***	31 J	***330***	***470***	***480***	***1200***	***2700 D***	***3100 D***	***2400 D***
CHROMIUM, HEXAVALENT	300	490 U	***8100***	***2300***	470 U	470 U	***1000 J***	***1500 J***	***24500***	***5100***	***11700***
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-30(3-3.8)-100417	B-31(1-2)-101817	B-31(5-5.5)-101817	B-32(1-2)-100417	B-32(2-4)-100417	B-33(0.5-1.5)-100417	B-33(3.5-4.5)-100417	B-34(0-1)-100617	B-34(5-5.5)-100617	B-35(1-2)-100417
SAMPLE DEPTH (FT BGS)		3-3.8	1-2	5-5.5	1-2	2-4	0.5-1.5	3.5-4.5	0-1	5-5.5	1-2
COLLECTION DATE:		10/4/2017	10/18/2017	10/18/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/6/2017	10/6/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	3950000	2370000	4060000	3620000	3970000	***10700000***	5130000	5010000	4460000	5220000
ANTIMONY	6000	5700	5000	***6400***	3800	5100	3400	1700	900U	800 U	3500
ARSENIC	680	***26100***	***35600***	***31400***	***24900***	***36500***	***4500***	***11700***	***4700***	***4800***	***8500***
BARIUM	2100000	902000	1580000	1180000	623000	1490000	270000	545000	150000	244000	720000
BERYLLIUM	700	430U	440 U	450U	410 U	590	***21900***	700	410 U	400 U	420 U
CADMIUM	2000	***8500***	***7100***	***5000***	***2800***	***6600***	***2500***	***2900***	490	500	530
CALCIUM	NE	4130000	7980000	30200000	4210000	9370000	39600000	27000000	7600000	6770000	66000000
CHROMIUM, TOTAL	NE	52300	112000	230000	41700	106000	175000	31300	13700	19500	14800
COBALT	23000	19600	5600	5000	20800	6400	***59600***	9200	8400	8300	3600
COPPER	3100000	337000	151000	203000	109000	132000	1040000 D	117000	63000	54100	34300
IRON	55000000	18600000	20100000	22700000	23900000	16100000	53900000	14200000	10400000	9860000	8480000
LEAD	90000	***6210000 D***	***3880000 D***	***3980000 D***	***1690000 D***	***4540000 D***	***911000 D***	***1210000 D***	***287000***	***311000***	***218000***
MAGNESIUM	NE	932000	1210000	6900000	1370000	1450000	5020000	2590000	2160000	2000000	15300000
MANGANESE	65000	***1910000 D***	***944000 D***	***732000***	***624000***	***1640000 D***	***463000***	***411000***	***299000***	***227000***	***186000***
NICKEL	48000	15100	9400	10600	16700	11800	***463000 D***	20200	11200	11000	8600
POTASSIUM	NE	287000	395000	387000	341000	430000	792000	378000	415000	370000	861000
SELENIUM	11000	2200 U	1300 J	1600 J	2000 U	2200 U	2500	2100 U	420 U	410 U	2100 U
SILVER	1000	880	440 U	530	410 U	440 U	960	420 U	410 U	***1900***	420 U
SODIUM	NE	161000U	436000	225000 U	71500U	574000	748000	355000	201000U	154000U	126000 *U
THALLIUM	780	430 U	440 U	450 U	410 U	440 U	360 U	420 U	410 U	400 U	420 U
VANADIUM	78000	23400	9600	14800	13900	13500	27300	12500	21700	15900	13400
ZINC	930000	***4960000 D***	***4400000 D***	***3430000 D***	***1670000 D***	***5710000 D***	***3470000 D***	***1450000 D***	203000	266000	556000
CYANIDE	20000	980	11700	12100	4100	2200	310 J	570 J	520 U	540 U	550 U
MERCURY	100	***2300 D***	***6600 D***	***4700 D***	***1100***	***5200 D***	***810***	***1300***	***1100***	***680***	***320***
CHROMIUM, HEXAVALENT	300	***5700***	***8300***	***5800***	***25100***	***23100***	***1800***	460 U	***1000 J***	430 U	***1500***
IRON, FERROUS	NE	--	0.36 J-	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-35(2-3.8)-100417	B-36(0-1)-100417	B-36(3-3.7)-100417	B-37(0-1)-100417	B-37(1-3)-100417	B-38(0-1)-100917	DUP-4-101017 B-38(0-1)	B-38(1-3)-100917	B-38(FILL)-100917	B-39(0.5-1.5)-100317
SAMPLE DEPTH (FT BGS)		2-3.8	0-1	3-3.7	0-1	1-3	0-1	0-1	1-3	-3-0	0.5-1.5
COLLECTION DATE:		10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/3/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	3670000	5730000	2880000	4430000	4010000	4890000	4530000	*7580000*	4930000	4450000
ANTIMONY	6000	1200	990U	1000 U	790U	820 U	2100	1000	930 U	*6400*	3700
ARSENIC	680	*20900*	*3000*	*8000*	*1800*	*1900*	*3600*	*3200*	*2400*	*8700*	*8300 *J*
BARIUM	2100000	452000	149000	108000	95000	56000	439000	351000	53200	727000	156000
BERYLLIUM	700	490 U	360 U	500 U	380 U	410 U	380 U	380 U	460 U	400 U	270 J
CADMIUM	2000	490 U	1100	500 U	620	*3200*	1900	1300	110 J	*3200*	580
CALCIUM	NE	27600000	6610000	3160000	12700000	18600000	15300000	13200000	11400000	15600000	8600000
CHROMIUM, TOTAL	NE	7800	22200	5200	23100	11400	20600	20200	11000	48900	16400
COBALT	23000	4500	7700	4900	7500	5400	6000	5800	5600	16200	6000
COPPER	3100000	240000	67600	85400	42000	39400	46600	42000	19200	121000	132000
IRON	55000000	6220000	13300000	4260000	12000000	9450000	11100000	10700000	11700000	21500000	12900000
LEAD	90000	*504000 D*	*182000*	*157000*	*92500*	71900	*794000 D*	*514000 D*	18100	*828000 D*	*317000*
MAGNESIUM	NE	2600000	4700000	291000	5680000	7770000	3350000	3220000	2120000	2660000	3360000
MANGANESE	65000	*112000*	*169000*	*143000*	*268000*	*146000*	*211000*	*187000*	*169000*	*349000*	*196000*
NICKEL	48000	9400	21000	9500	16300	12600	12800	10500	10700	22100	14100
POTASSIUM	NE	722000	333000	415000	532000	358000	447000	510000	496000	454000	431000
SELENIUM	11000	2500 U	1800 U	2500 U	1900 U	330 U	300 U	1900 U	370 U	2000 U	2100 U
SILVER	1000	490 U	360 U	*1700*	380U	410 U	380 U	380U	460 U	*1100*	410 *U
SODIUM	NE	249000 *U	510000 *U	237000 *U	221000 *U	176000 *U	337000 *J	367000 *J	231000 *U	199000 *U	474000
THALLIUM	780	490 U	360 U	500 U	380 U	410 U	380 U	380 U	460 U	400 U	79 J
VANADIUM	78000	19900	20100	24000	23800	18700	16700	17800	16500	18200	16300
ZINC	930000	290000	200000	113000	*966000 D*	77700	698000	455000	43200	*1300000 D*	323000
CYANIDE	20000	71 U	490 U	680 U	510 U	530 U	160 J	120 J	65 U	1800	110 J
MERCURY	100	*1200*	*430*	*170*	*340*	*180*	*710 J-*	*750 J-*	21 J	*4000 DJ-*	*470*
CHROMIUM, HEXAVALENT	300	540 U	*1700*	520 U	*2600*	*1700*	440 U	--	460 U	*4100 J*	*121000 J*
IRON, FERROUS	NE	—	—	—	—	—	—	--	—	0.71 J-	—

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-2C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-39(5-7)-100317	B-40(0-1)-092617	B-40(5-7)-092717	B-41(0-1)-092617	B-41(5-7)-092717	B-42(0.3-1.3)-100217	B-42(7-9)-100217	B-43(0-1)-092617	B-43(5-7)-092617	B-44(0-1)-100217	B-44(5-5.5)-100217
SAMPLE DEPTH (FT BGS)		5-7	0-1	5-7	0-1	5-7	0.3-1.3	7-9	0-1	5-7	0-1	5-5.5
COLLECTION DATE:		10/3/2017	9/26/2017	9/27/2017	9/26/2017	9/27/2017	10/2/2017	10/2/2017	9/26/2017	9/26/2017	10/2/2017	10/2/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)												
ALUMINUM	6000000	3020000	5990000	5190000	4970000	3650000	***7310000***	3530000	***6930000***	5250000	3680000	4150000
ANTIMONY	6000	1900	2100	2500	3900	790 U	1400	***7300***	1200	4600	1600	3900
ARSENIC	680	***5800 *J***	***3100***	***7500***	***7200***	***2200***	***4100***	***11500 *J***	***2800***	***10000***	***3800***	***5300***
BARIUM	2100000	44000	166000	127000	324000	77200	114000	463000	126000	191000	53700	105000
BERYLLIUM	700	240 J	440 U	470 U	***960***	400 U	410	210 J	390 U	400 U	200 J	210 J
CADMIUM	2000	420 U	1700	620	***4400***	400	560	740	670	630	400U	540
CALCIUM	NE	3490000	7150000	4170000	4790000	2850000	934000	9030000	8850000	8230000	8680000	22700000
CHROMIUM, TOTAL	NE	5600	54700	22100	63800	11400	16000	18800	116000	20100	12400	25400
COBALT	23000	5300	6100	7200	12100	4100	8000	4900	9800	7600	5200	6600
COPPER	3100000	133000	104000	68600	134000	19800	46600	255000	70500	97600	48400	88800
IRON	55000000	9600000	23200000	16300000	28900000	8320000	11500000	16400000	19900000	18700000	12700000	18600000
LEAD	90000	***216000***	***295000***	***270000***	***829000 D***	***240000***	***314000***	***585000 D***	***895000 D***	***445000 D***	***174000***	***323000***
MAGNESIUM	NE	1250000	4590000	1380000	3140000	1450000	1500000	2710000	5330000	4210000	4050000	2830000
MANGANESE	65000	***80500***	***178000***	***389000***	***364000***	***330000***	***492000***	***231000***	***208000***	***238000***	***217000***	***221000***
NICKEL	48000	27000	18700	20100	29700	7700	14400	14600	22800	19800	10900	13700
POTASSIUM	NE	305000	282000	440000	487000	341000	239000U	448000	280000	359000	347000	529000
SELENIUM	11000	2100 U	780 J	480 U	1200 J	400 U	2000 U	2700 U	620 J	960 J	2000 U	2300 U
SILVER	1000	420 *U	480U	470 U	650	400 U	390U	660 *J	390 U	420U	400 U	460 U
SODIUM	NE	114000	342000	225000U	226000U	75200U	44000U	140000U	591000	419000	179000U	304000
THALLIUM	780	420 U	440 U	470 U	410 U	400 U	390 U	540 U	390 U	400 U	400 U	460 U
VANADIUM	78000	16500	31000	23600	29100	8600	21200	11900	25300	20400	21900	15900
ZINC	930000	165000	290000	276000	***1160000 D***	461000	153000	480000	175000	325000	136000	265000
CYANIDE	20000	70 J	3400	2600	***37600 D***	3800	280 J	140 J	63 J	60 U	67 J	440 J
MERCURY	100	***1600***	***1600***	***1100***	***3000 D***	***220***	***1900***	***12800 D***	***4200 D***	***1500***	***630***	***810***
CHROMIUM, HEXAVALENT	300	490 U	***2300***	***1500***	***1900***	***1600***	***1500 J***	540 U	470 U	470 U	***610 J***	490 U
IRON, FERROUS	NE	--	--	--	--	--	--	--	1.1 J-	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-51(1-2)-092817	B-51(5-7)-092817	B-52(0-1)-102317	B-52(1-3)-102317	B-53(0-1)-092817	B-53(1-3)-092817	B-54(1-2)-092817	B-54(7-8)-092817	B-55(0.5-1.5)-100317	B-55(3.5-5)-100317	B-56(1-2)-092717
SAMPLE DEPTH (FT BGS)		1-2	5-7	0-1	1-3	0-1	1-3	1-2	7-8	0.5-1.5	3.5-5	1-2
COLLECTION DATE:		9/28/2017	9/28/2017	10/23/2017	10/23/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	10/3/2017	10/3/2017	9/27/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)												
ALUMINUM	6000000	4550000	5240000	4190000	4800000	5780000	2350000	4080000	3870000	4230000 (R)	4600000	5620000
ANTIMONY	6000	1600	2800	3100	***7300***	4700	2700	3100	5200	1400	4700	1400
ARSENIC	680	***4500***	***2800***	***5000***	***15100***	***7300***	***16500***	***10200***	***19800***	***10900***	***10800***	***6800***
BARIUM	2100000	116000	70900	265000	212000	262000	217000	510000	186000	123000	132000	109000
BERYLLIUM	700	250 J	220 J	450U	430U	330 J	210 J	300 J	220 J	410U	430 U	200 J
CADMIUM	2000	990	920	***2500***	1800	***3600***	310 J	1000	700	2000	1200	1000
CALCIUM	NE	3090000	36200000	3280000	15100000	4780000	3310000	5950000	7750000	24700000 J+	4960000	6130000
CHROMIUM, TOTAL	NE	28400	25900	51300	29500	35400	21800	34300	52100	20000	17000	41500
COBALT	23000	8600	4800	11300	8700	8400	4000	7400	3900	5300	5200	10600
COPPER	3100000	61300	28000	174000	201000	426000	118000	112000	215000	132000	111000	116000
IRON	55000000	18400000	20200000	20100000	27400000	12300000	11600000	16900000	14700000	15700000	19000000	23800000
LEAD	90000	***159000***	***215000***	***528000 D***	***813000 D***	***297000***	***803000 D***	***484000 D***	***471000***	***241000***	***450000 D***	***384000***
MAGNESIUM	NE	4390000	6510000	2490000	1890000	3230000	727000	2120000	2910000	2230000	2060000	3930000
MANGANESE	65000	***195000***	***230000***	***236000***	***290000***	***273000***	***81800***	***223000***	***191000***	***102000***	***259000***	***244000***
NICKEL	48000	38700	13200	***53200***	30300	***137000***	10300	25400	14700	18000	16100	40400
POTASSIUM	NE	702000	248000U	266000	353000	307000	253000	507000	386000	303000	392000	457000
SELENIUM	11000	1900 U	2200 U	530 J	1900 J	2000 U	2200 U	1900 U	2500 U	2000U	2200 U	2000 U
SILVER	1000	***1500***	430 U	530	800	***1600 ***	430 U	930 *	***5300 ***	400 U	430 U	850 *
SODIUM	NE	271000	487000	473000	213000 U	148000U	253000	135000U	158000U	133000U	119000U	371000
THALLIUM	780	380 U	430 U	400 U	430 U	400 U	430 U	390 U	510 U	400 U	430 U	410 U
VANADIUM	78000	44000	14100	21500	23800	26400	12700	17100	11400	13700	18100	35100
ZINC	930000	151000	282000	654000	568000	590000	203000	328000	626000	294000	458000	218000
CYANIDE	20000	140 J	63 U	290 J	200 J	300 J	300 J	85 J	260 J	65 J	100 J	670
MERCURY	100	***530***	***280***	***1800 D***	***6700 D***	***650***	***750***	***550***	***810***	***380***	***490***	***810***
CHROMIUM, HEXAVALENT	300	***1400***	520 U	***1700 J***	***1400 J***	***2000***	***4400***	***3100***	***1300***	***1700***	2000 U	***5200***
IRON, FERROUS	NE	--	--	1.2 J-	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-56(2-4)-092717	B-57(1-2)-100317	B-57(2-4)-100317	B-58(1-2)-092717	B-58(6-8)-092717	B-59(FILL)-100317	B-59(5-7)-100317	DUP-2-100317 B-59(5-7)	B-59(12-13.5)-100317	B-60(0-1)-092617
SAMPLE DEPTH (FT BGS)		2-4	1-2	2-4	1-2	6-8	-3-0	5-7	5-7	12-13.5	0-1
COLLECTION DATE:		9/27/2017	10/3/2017	10/3/2017	9/27/2017	9/27/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	9/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	4230000	4770000	*7400000*	3320000	4660000	3760000	3270000	3130000	3480000	5840000
ANTIMONY	6000	2600	2100	2000	5700	850 U	2200	3800	4000	860 U	2000
ARSENIC	680	*13400*	*15900 *J*	*17200 *J*	*26000*	*3900*	*6000 *J*	*12500 *J*	*13600 *J*	*1900 *J*	*5200*
BARIUM	2100000	210000	226000	200000	96300	65400	92200	180000	207000	28600	120000
BERYLLIUM	700	350 J	380 J	690	440 U	420 U	250 J	320 J	260 J	210 J	380 U
CADMIUM	2000	860	940	580	960	480	550	670	550	430 U	190 J
CALCIUM	NE	7190000	3410000	1550000	9260000	2370000	2770000	8250000	11100000	1200000	2500000
CHROMIUM, TOTAL	NE	28000	19300	80400	23000	5200	18900	15200	15800	8200	8800
COBALT	23000	7000	6100	4200	6200	6200	5500	5500	5100	3700	4500
COPPER	3100000	254000	168000	590000	543000	469000	74400	152000	120000	25200	58700
IRON	55000000	26900000	24000000	17800000	17100000	8510000	27500000	11700000	13700000	5850000	9460000
LEAD	90000	*838000 D*	*1060000 D*	*798000 D*	*753000 D*	50700	*288000*	*1770000 D*	*2530000 D*	34900	*299000*
MAGNESIUM	NE	1700000	1070000	262000	2210000	883000	1310000	1640000	2470000	925000	1720000
MANGANESE	65000	*247000*	*164000*	64400	*99000*	*289000*	*255000*	*368000*	*327000*	*282000*	*260000*
NICKEL	48000	18700	30500	*55100*	42500	19000	15600	11600	10600	5600	9500
POTASSIUM	NE	354000	424000	636000	684000	419000	343000	299000	297000	210000U	270000
SELENIUM	11000	2900	3900	*14100*	2100 J	660 J	1900 U	2100 U	2000 U	2100 U	930 J
SILVER	1000	870 *	460 *U	*6600 *J*	*1400*	420 U	380 *U	420 *U	690 *J	430 *U	380 U
SODIUM	NE	200000U	121000U	128000U	226000U	77900U	48600	225000U	213000U	42900 U	155000U
THALLIUM	780	430 U	410 U	570 U	440 U	420 U	370 U	420 U	400 U	430 U	380 U
VANADIUM	78000	20500	19300	43800	22300	9700	16700	17000	16700	7400	14600
ZINC	930000	486000	393000	337000	128000	627000	209000	368000	376000	27200	109000
CYANIDE	20000	110 J	90 J	160 J	240 J	62 U	190 J	530 J	920	60 U	86 J
MERCURY	100	*1400*	*2600 D*	*940*	*280*	*200*	*1000*	*3100 D*	*2800 D*	*160*	*400*
CHROMIUM, HEXAVALENT	300	490 U	460 U	*6200 J*	*630*	500 U	*650 J*	*1800 J*	--	480 U	1800 U
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-60(5-7)-092617	B-60(FILL)-092617	B-61(0-1)-101117	B-61(5-6)-101117	B-62(0-1)-101117	B-62(5-5.5)-101117	B-63(0-1)-101117	B-63(1-3)-101117	B-64(1.5-2.5)-101117	DUP-5-101117 B-64(1.5-2.5)
SAMPLE DEPTH (FT BGS)		5-7	-4-0	0-1	5-6	0-1	5-5.5	0-1	1-3	1.5-2.5	1.5-2.5
COLLECTION DATE:		9/26/2017	9/26/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/201
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)											
ALUMINUM	6000000	4210000	3830000	3400000	3020000	4710000	3870000	***6400000***	4040000	***6400000***	5340000
ANTIMONY	6000	4200	***7100***	2800	790 U	780U	830U	2500	820U	4000 J	2300 J
ARSENIC	680	***7500***	***19800***	***5400***	***2200***	***3200***	***3800***	***3200***	***2600***	***8200***	***5400***
BARIUM	2100000	422000	780000	308000	35800	117000	85300	377000	65800	850000 J	505000 J
BERYLLIUM	700	***740***	400 U	570	400 U	390 U	410 U	390 U	390 U	410 U	400 U
CADMIUM	2000	1600	***4700***	750	400 U	920	810	2000	1700	2000 J	1200 J
CALCIUM	NE	19600000	10300000	3140000	813000	7790000	3200000	4550000	1340000	15500000	12500000
CHROMIUM, TOTAL	NE	46700	47100	25800	6800	33700	18400	26500	13700	37800	26700
COBALT	23000	11500	6700	4700	3000	6800	5700	11400	5900	10500	8700
COPPER	3100000	278000	145000	47900	13400	55300	41400	83200	31600	84500	69000
IRON	55000000	***75700000***	28600000	12000000	6080000	11900000	15100000	16700000	26800000	18900000	16000000
LEAD	90000	***1180000 D***	***2550000 D***	***333000***	43700	***215000***	***143000***	***440000 D***	***126000***	***1080000 J***	***646000 J***
MAGNESIUM	NE	1610000	2600000	1230000	796000	2980000	1990000	6650000	1540000	4870000	4830000
MANGANESE	65000	***548000***	***3510000 D***	***84800***	***282000***	***316000***	***227000***	***271000***	***402000***	***344000***	***252000***
NICKEL	48000	39200	23700	12600	5300	16500	14100	28700	13000	26700	20700
POTASSIUM	NE	392000	451000	802000	286000	579000	362000	428000	324000	536000	636000
SELENIUM	11000	710 J	810 J	310 U	320 U	310 U	330 U	310 U	310 U	330 U	320 U
SILVER	1000	430 U	620	380 U	400 U	560	410 U	***3700***	670	***1400***	***1200***
SODIUM	NE	258000	191000U	191000 UJ	198000 UJ	241000 UJ	325000 *J	457000 *J	240000 UJ	468000 *J	354000 *J
THALLIUM	780	430 U	400 U	380 U	400 U	390 U	410 U	390 U	390 U	410 U	400 U
VANADIUM	78000	14300	16100	22400	7300	15800	13000	21500	16700	23300	20500
ZINC	930000	781000	***1850000 D***	256000	40900	216000	184000	***1010000 D***	572000	***1870000 D***	***1190000 D***
CYANIDE	20000	1500	1500	310 J	58 U	220 J	560	240 J	80 J	1100	570
MERCURY	100	***13400 D***	***8300 D***	***370***	54 J	***280***	***230***	***350***	***140***	***330***	***360***
CHROMIUM, HEXAVALENT	300	***4000***	***5400***	***6100 J***	***660 J***	***3000 J***	***700 J***	***1500 J***	***890 J***	***1600 J***	--
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-64(2.5-4.5)-101117	B-65(0.5-1.5)-101317	B-65(1.5-2.7)-101317	B-66(1.5-2.5)-101017	B-66(2.5-4.5)-101017	B-67(1.5-2.5)-101017	B-67(2.5-3.8)-101017	B-68(1-2)-102417	B-69(0-1)-092717
SAMPLE DEPTH (FT BGS)		2.5-4.5	0.5-1.5	1.5-2.7	1.5-2.5	2.5-4.5	1.5-2.5	2.5-3.8	1-2	0-1
COLLECTION DATE:		10/11/2017	10/13/2017	10/13/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/24/2017	9/27/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)										
ALUMINUM	6000000	5050000	5370000	4690000	4740000	3520000	4290000	5050000	4730000	5590000
ANTIMONY	6000	1900	1500	2900	1700	2100	770 U	***6100***	2800	740 U
ARSENIC	680	***5700***	***4400***	***5700***	***3200***	***8400***	***1400***	***5300***	***4300***	***2700***
BARIUM	2100000	631000	107000	157000	440000	640000	53000	978000	220000	143000
BERYLLIUM	700	410 U	420 U	420U	400 U	400 U	390 U	430 U	520U	370 U
CADMIUM	2000	1200	840	***5900***	690	900	330 J	***41800***	370 J	610
CALCIUM	NE	11900000	17900000	8110000	29600000	3620000	14400000	4210000	27800000	15600000
CHROMIUM, TOTAL	NE	21000	22300	30100	35600	31400	13100	479000 D	11800	16000
COBALT	23000	22600	6900	6000	6300	4800	5700	4700	5800	7500
COPPER	3100000	88000	76000	66600	74400	70000	47800	101000	60500	56300
IRON	55000000	11600000	21800000	12500000	13100000	9200000	10300000	7610000	6490000	14900000
LEAD	90000	***823000 D***	***141000***	***3540000 D***	***391000 D***	***841000 D***	48800	***2880000 D***	***422000***	***153000***
MAGNESIUM	NE	6680000	2600000	1190000	3070000	824000	2280000	1340000	2000000	6080000
MANGANESE	65000	***227000***	***315000***	***288000***	***159000***	***142000***	***353000***	***109000***	***189000***	***242000***
NICKEL	48000	17900	23700	19600	25000	8200	26700	10000	11700	18600
POTASSIUM	NE	351000	467000	343000	492000	246000	496000	331000	1150000	575000
SELENIUM	11000	330 U	340 U	330 U	2000 U	2000 U	310 U	9100	2300 U	630 J
SILVER	1000	650	440U	420 U	400U	400U	390 U	430 U	450 U	370 U
SODIUM	NE	483000 *J	370000	315000	486000 *J	197000 *U	192000 *U	263000 *J	1990000	389000
THALLIUM	780	410 U	420 U	420 U	400 U	400 U	390 U	430 U	450 U	370 U
VANADIUM	78000	16500	18900	13100	16200	10700	14300	17800	13800	28300
ZINC	930000	***1380000 D***	194000	377000	300000	547000	76600	***934000 D***	243000	136000
CYANIDE	20000	720	370 J	450 J	7500	3100	58 U	9200	110 J	55 U
MERCURY	100	***280***	90 J	***370***	***220 J-***	***1900 J-***	***130 J-***	***300***	***860***	***230***
CHROMIUM, HEXAVALENT	300	***3900 J***	***720 J***	***21500 J***	***7200 J***	***7700***	***590***	***3400***	2000 U	***1200***
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-2C

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-69(1-3)-092717	B-70(0-1)-092717	B-70(5-7)-092717	B-71(3-5)-101617	B-74(0-1)-100417	B-74(3-4)-100417	B-75(0-1)-092917	B-75(1-3)-092917	B-76(0-1)-102317	B-76(1-3)-102317	DUP-7-102317 B-76(1-3)
SAMPLE DEPTH (FT BGS)		1-3	0-1	5-7	3-5	0-1	3-4	0-1	1-3	0-1	1-3	1-3
COLLECTION DATE:		9/27/2017	9/27/2017	9/27/2017	10/16/2017	10/4/2017	10/4/2017	9/29/2017	9/29/2017	10/23/2017	10/23/2017	10/23/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)												
ALUMINUM	6000000	4080000	***7160000***	4690000	***11000000***	4750000	1820000	***6330000***	2950000	3560000	3510000	4640000
ANTIMONY	6000	900U	1200	3300	860U	730 U	4800	710 U	2300	***6900***	2800	3000
ARSENIC	680	***3000***	***2400***	***23000***	***3800 *J-***	***1300***	***10200***	***1100***	***7100***	***7700***	***4100***	***5200***
BARIUM	2100000	100000	60200	1550000	93300	55300	863000	40600	176000	174000	177000	130000
BERYLLIUM	700	160 J	390 U	450 U	***970***	140 J	220 J	130 J	320 J	400 U	410 U	490 U
CADMIUM	2000	640	560	***4600***	140 J	860	600	460	1600	690	410 U	330 J
CALCIUM	NE	25100000	17800000	14400000	11500000	11800000	2640000	11200000	2070000	3800000	2530000	3930000
CHROMIUM, TOTAL	NE	13800	21800	50700	21500	18000	11700	11600	55700	13100	6100	7900
COBALT	23000	7600	10000	6400	18800	8700	6700	9100	8800	5700	4900	6000
COPPER	3100000	58000	80400	223000	19100	82100	102000	70100	162000	225000	132000	172000
IRON	55000000	11800000	18700000	12600000	24100000	14400000	17200000	14400000	22800000	16300000	10400000	12500000
LEAD	90000	***167000***	***210000***	***3020000 D***	48700	***123000***	***3080000 D***	76300	***8690000 D***	***662000 D***	***358000***	***374000***
MAGNESIUM	NE	16400000	7560000	3820000	4900000	5300000	468000	7610000	339000	1760000	1680000 J	2800000 J
MANGANESE	65000	***148000***	***245000***	***318000***	***1130000 D***	***169000***	***238000***	***171000***	***155000***	***233000***	***454000***	***360000***
NICKEL	48000	16000	23800	13100	19900	20700	11400	23700	14500	14500	10400	13300
POTASSIUM	NE	178000	488000	403000	1090000	253000	232000	252000	287000	370000	315000	375000U
SELENIUM	11000	520 J	390 U	1300 J	2100 U	370 U	2100 U	1800 U	2300 U	1000 J	740 J	540 J
SILVER	1000	360 U	390 U	590	420 U	370 U	420 U	360 U	470 U	520	410 U	890
SODIUM	NE	468000	677000	313000	854000	588000	185000U	800000	299000	227000U	205000 U	249000U
THALLIUM	780	360 U	390 U	450 U	420 U	370 U	420 U	360 U	470 U	400 U	410 U	490 U
VANADIUM	78000	22000	42900	18300	29300	23300	11000	22300	29400	19400	9600	12300
ZINC	930000	146000	148000	***2360000 D***	52000	109000	***2510000 D***	79800	602000	356000	142000	170000
CYANIDE	20000	110 J	72 J	170 J	63 U	470 J	250 J	75 J	120 J	200 J	130 J	160 J
MERCURY	100	***550***	***1700***	***850***	20 J	***220***	***260***	96	***610***	***7100 D***	***12100 D***	***13900 D***
CHROMIUM, HEXAVALENT	300	***2200***	***700***	***28600***	460 U	***910 J***	480 U	***670***	490 U	***1100 J***	***1000 J-***	--
IRON, FERROUS	NE	--	--	--	--	--	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4

SUMMARY OF SOIL SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		B-77(0-1)-092817	B-77(1-3)-092817	DUP-1-092817 B-77(1-3)	B-78(0.5-1.5)-102517	B-78(5-7)-102517	B-79(1-2)-102617	B-79(5-6)-102617
SAMPLE DEPTH (FT BGS)		0-1	1-3	1-3	0.5-1.5	5-7	1-2	5-6
COLLECTION DATE:		9/28/2017	9/28/2017	9/28/2017	10/25/2017	10/25/2017	10/26/2017	10/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result
Metals (ug/kg)								
ALUMINUM	6000000	4160000	4340000	3780000	*6380000*	3280000	3820000	4770000
ANTIMONY	6000	1400	2800	3300	3500	*10700*	850U	820 U
ARSENIC	680	*4200*	*7600*	*8100*	*3700*	*10100*	*4600*	*1900*
BARIUM	2100000	134000	309000	229000	83000	128000	195000	47100
BERYLLIUM	700	190 J	260 J	250 J	520	570 U	390 U	410 U
CADMIUM	2000	630	190 J	190 J	410 U	570 U	420U	410 U
CALCIUM	NE	3550000	3820000	3110000	2570000	13400000	6820000	3270000
CHROMIUM, TOTAL	NE	14000	12300	12900	14000	10600	16000	10400
COBALT	23000	6600	6200	6500	6400	3900	3900	4900
COPPER	3100000	57200	105000	92200	65400	102000	42000	18900
IRON	55000000	16800000	20200000	26000000	15800000	12500000	6330000	8680000
LEAD	90000	*152000*	*424000 D*	*483000 D*	*166000*	*470000*	*405000 D*	33100
MAGNESIUM	NE	2350000	1240000	1240000	1960000	2870000	1220000	1540000
MANGANESE	65000	*492000*	*407000*	*393000*	*412000*	*191000*	*148000*	*159000*
NICKEL	48000	23800	12200	12700	11100	11600	7800	7000
POTASSIUM	NE	453000	431000	361000	756000	550000	292000	283000
SELENIUM	11000	1900 U	1900 U	1900 U	330 U	2800 U	2000 U	330 U
SILVER	1000	370 *U	*2900 *J*	*5300 *J*	410 U	510 J	390 U	410 U
SODIUM	NE	191000U	127000U	94200U	222000U	387000	196000 U	204000 U
THALLIUM	780	370 U	380 U	370 U	410 U	570 U	390 U	410 U
VANADIUM	78000	20400	18000	15700	19200	10100	13200	12100
ZINC	930000	168000	156000	183000	79600	244000	222000	53300
CYANIDE	20000	130 J	360 J	300 J	61 U	83 U	60 U	59 U
MERCURY	100	*1100*	*720*	*740*	*390*	*870*	*280*	63 J
CHROMIUM, HEXAVALENT	300	*1300*	410 U	--	*950*	500 U	*590*	*730*
IRON, FERROUS	NE	--	--	--	--	--	0.65 J-	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3(B)

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-3(1-2)-102517	B-3(2-3)-102517	B-4(0-1)-100617	B-4(1-3)-100617	B-5(0.5-1.5)-101317	B-5(5-6.5)-101317	B-6(3.5-4.5)-101717	B-6(5-5.5)-101717	B-7(0.5-1.5)-101017	B-7(5-6)-101017	B-8(1.5-2.5)-101017
SAMPLE DEPTH (FT BGS)		1-2	2-3	0-1	1-3	0.5-1.5	5-6.5	3.5-4.5	5-5.5	0.5-1.5	5-6	1.5-2.5
COLLECTION DATE:		10/25/2017	10/25/2017	10/6/2017	10/6/2017	10/13/2017	10/13/2017	10/17/2017	10/17/2017	10/10/2017	10/10/2017	10/10/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)												
AROCLOR 1254	200	2.6 U	2.4 U	2.4 U	51 P	2.5 U	2.3 U	2.5 U	2.4 U	29 J	2.4 U	84 J
AROCLOR 1260	200	2.6 U	2.4 U	2.4 U	2.5 U	2.5 U	2.3 U	2.5 U	2.4 U	59 J	2.4 U	100 J

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

D - Result is from a diluted sample

P - Percent difference >25%

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 3(4)

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-8(5-6.25)-101017	B-9(0-1)-101617	B-9(5-6)-101617	B-10(3-5)-101617	B-12(0-1)-101317	B-12(1-3)-101317	B-13(0-1)-101117	B-13(1-3)-101117	B-14(0-1)-101717	B-14(7-7.5)-101717	B-15(0.25-1.25)-101717
SAMPLE DEPTH (FT BGS)		5-6.25	0-1	5-6	3-5	0-1	1-3	0-1	1-3	0-1	7-7.5	0.25-1.25
COLLECTION DATE:		10/10/2017	10/16/2017	10/16/2017	10/16/2017	10/13/2017	10/13/2017	10/11/2017	10/11/2017	10/17/2017	10/17/2017	10/17/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)												
AROCLOR 1254	200	2.4 U	*1700 J*	140	2.8 U	29 J	2.6 U	2.6 U	2.5 U	2.3 U	2.4 U	2.5 U
AROCLOR 1260	200	41 J	*1800 J*	130 J	2.8 U	2.6 U	26 J	2.6 U	2.5 U	2.3 U	2.4 U	*210 J*

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A2

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-15(5-6)-101717	B-16(0-1)-101217	B-16(7-7.75)-101217	B-17(0.25-1.25)-101717	B-17(5-6.5)-101717	DUP-6-101717 B-17(5-6.5)	B-18(0-1)-101217	B-18(5-6)-101217	B-19(0-1)-101117	B-19(2-4)-101117
SAMPLE DEPTH (FT BGS)		5-6	0-1	7-7.75	0.25-1.25	5-6.5	5-6.5	0-1	5-6	0-1	2-4
COLLECTION DATE:		10/17/2017	10/12/2017	10/12/2017	10/17/2017	10/17/2017	10/17/2017	10/12/2017	10/12/2017	10/11/2017	10/11/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	2.5 U	2.5 U	2.4 U	150 J	2.6 U	2.6 U	2.4 U	2.5 U	2.5 U	2.5 U
AROCLOR 1260	200	2.5 U	2.5 U	2.4 U	2.4 U	2.6 U	2.6 U	2.4 U	2.5 U	2.5 U	190

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-20(3.5-4)-101817	B-20(5-6)-101817	B-22(0-1)-100617	B-22(1-3)-100617	B-23(0-1)-100517	B-23(1-3)-100517	B-24(0.5-1.5)-100517	B-24(1.5-3.5)-100517	DUP-3-100517 B-24(1.5-3.5)	B-25(0.5-1.5)-100517
SAMPLE DEPTH (FT BGS)		3.5-4	5-6	0-1	1-3	0-1	1-3	0.5-1.5	1.5-3.5	1.5-3.5	0.5-1.5
COLLECTION DATE:		10/18/2017	10/18/2017	10/6/2017	10/6/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	2.7 U	2.6 U	2.3 U	2.4 U	2.3 U	2.5 U	140 J	2.6 U	2.6 U	100 J
AROCLOR 1260	200	2.7 U	2.6 U	120 J	2.4 U	75 J	2.5 U	2.3 U	2.6 U	2.6 U	2.3 U

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4B

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-25(5-5.5)-100517	B-26(0.5-1.5)-100517	B-26(5-5.8)-100517	B-27(0.5-1.5)-100517	B-27(5-5.5)-100517	B-28(0.5-1.5)-100917	B-28(1.5-2.75)-100917	B-29(0-1)-092917	B-29(1-3)-092917	B-30(0-1)-100417
SAMPLE DEPTH (FT BGS)		5-5.5	0.5-1.5	5-5.8	0.5-1.5	5-5.5	0.5-1.5	1.5-2.75	0-1	1-3	0-1
COLLECTION DATE:		10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/9/2017	10/9/2017	9/29/2017	9/29/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	99 P	2.6 U	19 J	24 J	23 J	2.4 U	74 P	91 J	74 J	190 P
AROCLOR 1260	200	2.4 U	20 J	2.6 U	2.5 U	2.7 U	59 J	90 P	98 J	83 J	2.4 U

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-6

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-30(3-3.8)-100417	B-31(1-2)-101817	B-31(5-5.5)-101817	B-32(1-2)-100417	B-32(2-4)-100417	B-33(0.5-1.5)-100417	B-33(3.5-4.5)-100417	B-34(0-1)-100617	B-34(5-5.5)-100617	B-35(1-2)-100417
SAMPLE DEPTH (FT BGS)		3-3.8	1-2	5-5.5	1-2	2-4	0.5-1.5	3.5-4.5	0-1	5-5.5	1-2
COLLECTION DATE:		10/4/2017	10/18/2017	10/18/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/6/2017	10/6/2017	10/4/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	2.6 U	2.6 U	2.8 U	68 P	2.8 UJ	***230 P***	2.7 U	2.4 U	2.4 U	14 J
AROCLOR 1260	200	29 J	2.6 U	2.8 U	2.4 U	2.8 UJ	2.3 U	2.7 U	45 J	25 J	2.5 U

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-4D

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-35(2-3.8)-100417	B-36(0-1)-100417	B-36(3-3.7)-100417	B-37(0-1)-100417	B-37(1-3)-100417	B-38(0-1)-100917	DUP-4-101017 B-38(0-1)	B-38(1-3)-100917	B-38(FILL)-100917	B-39(0.5-1.5)-100317
SAMPLE DEPTH (FT BGS)		2-3.8	0-1	3-3.7	0-1	1-3	0-1	0-1	1-3	-3-0	0.5-1.5
COLLECTION DATE:		10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/4/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/3/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	*450 J*	180	3.1 U	150 J	50 J	*240 J*	140 J	2.8 U	*2600 EJ*	69
AROCLOR 1260	200	2.9 U	2.2 UJ	3.1 U	2.4 U	2.4 U	180 J	120 J	2.8 U	*2100 EJ*	85

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2A

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-39(5-7)-100317	B-40(0-1)-092617	B-40(5-7)-092717	B-41(0-1)-092617	B-41(5-7)-092717	B-42(0.3-1.3)-100217	B-42(7-9)-100217	B-43(0-1)-092617	B-43(5-7)-092617	B-44(0-1)-100217	B-44(5-5.5)-100217
SAMPLE DEPTH (FT BGS)		5-7	0-1	5-7	0-1	5-7	0.3-1.3	7-9	0-1	5-7	0-1	5-5.5
COLLECTION DATE:		10/3/2017	9/26/2017	9/27/2017	9/26/2017	9/27/2017	10/2/2017	10/2/2017	9/26/2017	9/26/2017	10/2/2017	10/2/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)												
AROCLOR 1254	200	18 J	***3100 DP***	2.8 U	***1400 D***	2.4 U	120 J	3.2 U	2.4 U	59 J	2.4 U	***210 P***
AROCLOR 1260	200	19 JJ	2.6 U	36 J	2.4 UJ	2.4 U	74 J	3.2 U	46 J	86 J	2.4 U	2.8 U

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-51(1-2)-092817	B-51(5-7)-092817	B-52(0-1)-102317	B-52(1-3)-102317	B-53(0-1)-092817	B-53(1-3)-092817	B-54(1-2)-092817	B-54(7-8)-092817	B-55(0.5-1.5)-100317	B-55(3.5-5)-100317	B-56(1-2)-092717
SAMPLE DEPTH (FT BGS)		1-2	5-7	0-1	1-3	0-1	1-3	1-2	7-8	0.5-1.5	3.5-5	1-2
COLLECTION DATE:		9/28/2017	9/28/2017	10/23/2017	10/23/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	10/3/2017	10/3/2017	9/27/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)												
AROCLOR 1254	200	84 P	2.7 U	***2200 DP***	***220 J***	93 J	2.6 U	21 J	3.3 U	2.4 U	2.7 U	93 J
AROCLOR 1260	200	69 P	2.7 U	***2800 DP***	***220 J***	100 J	2.6 U	20 J	3.3 U	24 JJ	15 JJ	90 J

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-10

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-56(2-4)-092717	B-57(1-2)-100317	B-57(2-4)-100317	B-58(1-2)-092717	B-58(6-8)-092717	B-59(FILL)-100317	B-59(5-7)-100317	DUP-2-100317 B-59(5-7)	B-59(12-13.5)-100317	B-60(0-1)-092617	B-60(5-7)-092617
SAMPLE DEPTH (FT BGS)		2-4	1-2	2-4	1-2	6-8	-3-0	5-7	5-7	12-13.5	0-1	5-7
COLLECTION DATE:		9/27/2017	10/3/2017	10/3/2017	9/27/2017	9/27/2017	10/3/2017	10/3/2017	10/3/2017	10/3/2017	9/26/2017	9/26/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)												
AROCLOR 1254	200	65 J	2.6 U	3.3 U	2.5 U	2.6 U	2.3 U	2.4 U	2.4 U	2.5 U	2.4 U	24 JJ
AROCLOR 1260	200	35 J	10 JJ	3.3 U	9.9 JJ	2.6 U	130	27 J	26 J	2.5 U	2.4 U	2.5 U

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2(D)

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-60(FILL)-092617	B-61(0-1)-101117	B-61(5-6)-101117	B-62(0-1)-101117	B-62(5-5.5)-101117	B-63(0-1)-101117	B-63(1-3)-101117	B-64(1.5-2.5)-101117	DUP-5-101117 B-64(1.5-2.5)	B-64(2.5-4.5)-101117
SAMPLE DEPTH (FT BGS)		-4-0	0-1	5-6	0-1	5-5.5	0-1	1-3	1.5-2.5	1.5-2.5	2.5-4.5
COLLECTION DATE:		9/26/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/201	10/11/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	2.4 U	2.4 U	2.4 U	2.4 U	2.5 U	2.4 U	2.4 U	2.4 U	2.4 U	2.5 U
AROCLOR 1260	200	2.4 U	*770 D*	2.4 U	*220 P*	2.5 U	110 P	110	*300 P*	*670 DP*	190 P

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2(2)

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-65(0.5-1.5)-101317	B-65(1.5-2.7)-101317	B-66(1.5-2.5)-101017	B-66(2.5-4.5)-101017	B-67(1.5-2.5)-101017	B-67(2.5-3.8)-101017	B-68(1-2)-102417	B-69(0-1)-092717	B-69(1-3)-092717	B-70(0-1)-092717
SAMPLE DEPTH (FT BGS)		0.5-1.5	1.5-2.7	1.5-2.5	2.5-4.5	1.5-2.5	2.5-3.8	1-2	0-1	1-3	0-1
COLLECTION DATE:		10/13/2017	10/13/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/24/2017	9/27/2017	9/27/2017	9/27/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/kg)											
AROCLOR 1254	200	2.5 U	2.4 U	2.4 U	2.5 U	2.4 U	2.8 U	2.8 U	2.3 U	*350 J*	92 J
AROCLOR 1260	200	21 P	*2200 D*	86 J	59 J	67 J	*10000 DP*	2.8 U	40 J	*210 J*	65 J

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-2

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		B-70(5-7)-092717	B-71(3-5)-101617	B-74(0-1)-100417	B-74(3-4)-100417	B-75(0-1)-092917	B-75(1-3)-092917	B-76(0-1)-102317	B-76(1-3)-102317	DUP-7-102317	B-76(1-3)	B-77(0-1)-092817	B-77(1-3)-092817
SAMPLE DEPTH (FT BGS)		5-7	3-5	0-1	3-4	0-1	1-3	0-1	1-3	1-3		0-1	1-3
COLLECTION DATE:		9/27/2017	10/16/2017	10/4/2017	10/4/2017	9/29/2017	9/29/2017	10/23/2017	10/23/2017	10/23/2017		9/28/2017	9/28/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result		Result	Result
PCBs (ug/kg)													
AROCLOR 1254	200	2.7 U	2.6 U	140	2.6 U	46 P	2.8 U	2.5 U	2.5 U	2.8 U		2.3 U	2.3 U
AROCLOR 1260	200	2.7 U	2.6 U	120 J	2.6 U	47 J	15 J	2.5 U	2.5 U	2.8 U		19 JJ	2.3 U

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-01

SUMMARY OF SOIL SAMPLE DETECTIONS - PCBs

SAMPLE ID:		DUP-1-092817	B-77(1-3)	B-78(0.5-1.5)-102517	B-78(5-7)-102517	B-79(1-2)-102617	B-79(5-6)-102617
SAMPLE DEPTH (FT BGS)		1-3		0.5-1.5	5-7	1-2	5-6
COLLECTION DATE:		9/28/2017		10/25/2017	10/25/2017	10/26/2017	10/26/2017
Lab Analyte	PAL	Result		Result	Result	Result	Result
PCBs (ug/kg)							
AROCLOR 1254	200	2.3 U		2.5 U	3.4 U	2.5 U	2.4 U
AROCLOR 1260	200	2.3 U		2.5 U	3.4 U	2.5 U	29 J

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-5
PHASE 1 SUPPLEMENTAL SOIL SAMPLE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

2017 Phase 1 Sampling Location/Designation [a]	Sample Depth (ft bgs) [b]	Number of Phase 1 Samples / Frequency [c]
Supplemental Surface Soil Samples		
Dioxinfuran (DF)		
DF-L66(6-12)	0-0.5'	1
DF-BLDG5	0-0.5'	1
DF-1 (6-12)	0.5' - 1.0'	1
DF-2	0-0.5'	1
DF-3	0-0.5'	1
DF-4	0-0.5'	1
DF-5 (19 - 25)	1.6'-2.1'	1
DF-6	0-0.5'	1
DF-6_DUP	0-0.5'	1
DF-7	0-0.5'	1
Herbicide/Pesticide (HP)		
HP-RR1	0-0.5'	1
HP-RR1_DUP	0-0.5'	1
HP-RR2	0-0.5'	1
HP-RR3(22-28)	1.8'-2.3'	1
HP-FL1	0-0.5'	1
HP-FL2	0-0.5'	1

Notes:

a) Laboratory submitted soil sample ID.

b) "Feet bgs" - feet below ground surface.

c) Number of samples collected at depth interval per boring listed.

d) "DUPs" are listed below the sample they correspond with.

e) "Fill" indicates this sample interval was collected from fill/debris piles located above the surface sample.

TABLE 2-6

SUMMARY OF SOIL SAMPLE DETECTIONS - DIOXINS/FURANS AND PESTICIDES

SAMPLE ID:		HP-FL1-2	HP-FL2-2	HP-RR1-2	HP-RR1-2 DUP	HP-RR2-2	HP-RR3(22-28)-2	DF-1(6-12)-100317	DF-2(0-6)-100317	DF-3(0-6)-100317	DF-4(0-6)-100317	DF-5 (19-25)-100317	DF-6(0-6)-100317
SAMPLE DEPTH (FT BGS)		0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	1.84-2.33	0.5-1	0-0.5	0-0.5	0-0.5	1.58-2.08	0-0.5
COLLECTION DATE:		9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017	9/28/2017
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Dioxins/Furans (ug/kg)													
1,2,3,4,6,7,8-HPCDD	NE	--	--	--	--	--	--	0.213	0.0889	0.694	0.543	0.14	1.44
1,2,3,4,6,7,8-HPCDF	NE	--	--	--	--	--	--	0.098	0.0316	0.237	0.154 J	0.051	0.5
1,2,3,4,7,8,9-HPCDF	NE	--	--	--	--	--	--	0.00466	0.000895 U	0.0118	0.00985 J EMPC	0.00196 J	0.0599
1,2,3,4,7,8-HXCDD	NE	--	--	--	--	--	--	0.00264	0.000996 J	0.00732	0.00853 J	0.00348	0.0422
1,2,3,4,7,8-HXCDF	NE	--	--	--	--	--	--	0.0134	0.00311	0.017	0.0192	0.00493	0.176
1,2,3,6,7,8-HXCDD	NE	--	--	--	--	--	--	0.0131	0.00297	0.0311	0.0266	0.0109	0.18
1,2,3,6,7,8-HXCDF	NE	--	--	--	--	--	--	0.00623	0.00175 J	0.00901	0.0114	0.00375	0.186
1,2,3,7,8,9-HXCDD	NE	--	--	--	--	--	--	0.00782	0.00212 J	0.0199	0.019	0.0111	0.0936
1,2,3,7,8,9-HXCDF	NE	--	--	--	--	--	--	0.000733 J	0.000403 U	0.00141 U	0.00138 J	0.000489 U	0.0275
1,2,3,7,8-PECDD	NE	--	--	--	--	--	--	0.00307	0.000199 U	0.00816	0.00727	0.00545	0.0448
1,2,3,7,8-PECDF	NE	--	--	--	--	--	--	0.00347	0.000779 J	0.00435	0.00524	0.00124 J EMPC	0.0349
2,3,4,6,7,8-HXCDF	NE	--	--	--	--	--	--	0.00827	0.00211 J	0.0134	0.0155 J	0.00503	0.407
2,3,4,7,8-PECDF	NE	--	--	--	--	--	--	0.0126	0.00248	0.0146	0.016	0.00789	0.836
2,3,7,8-TCDD	0.0048	--	--	--	--	--	--	***0.00666***	0.000377 J EMPC	***0.00752***	***0.0208***	0.00244	***0.013***
2,3,7,8-TCDF	NE	--	--	--	--	--	--	0.00775	0.00173	0.00992	0.0103	0.00225	0.0405
OCDD	NE	--	--	--	--	--	--	1.58	1.94	7.42	6.8	1.34	11.9 J
OCDF	NE	--	--	--	--	--	--	0.174	0.0737	0.658	0.298	0.0643	0.851
TOTAL HEPTA-DIOXINS	NE	--	--	--	--	--	--	0.408	0.166	1.37	1.19	0.294	3.16
TOTAL HEPTA-FURANS	NE	--	--	--	--	--	--	0.205	0.0717	0.74	0.381 EMPC	0.0997 EMPC	1.24
TOTAL HEXA-DIOXINS	NE	--	--	--	--	--	--	0.126	0.0229 EMPC	0.245 EMPC	0.252	0.121	1.57
TOTAL HEXA-FURANS	NE	--	--	--	--	--	--	0.127 EMPC	0.033	0.258	0.234 EMPC	0.0767 EMPC	4.68
TOTAL PENTA-DIOXINS	NE	--	--	--	--	--	--	0.0339	0.00591 EMPC	0.0618	0.0786	0.0503 EMPC	0.616
TOTAL PENTA-FURANS	NE	--	--	--	--	--	--	0.137	0.0259 EMPC	0.173	0.213	0.101 EMPC	7.6
TOTAL TETRA-DIOXINS	NE	--	--	--	--	--	--	0.025 EMPC	0.00182 EMPC	0.0243 EMPC	0.0691 EMPC	0.0153 EMPC	0.142 EMPC
TOTAL TETRA-FURANS	NE	--	--	--	--	--	--	0.119	0.025 EMPC	0.124 EMPC	0.175 EMPC	0.0504 EMPC	2.3
Pesticides (ug/kg)													
HEPTACHLOR EPOXIDE	10	0.0596 U	0.0633 U	6.4 J	3.6 J	0.0652 U	0.0605 U	--	--	--	--	--	--

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

EMPC - Represents an estimated maximum possible concentration

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 2-6

SUMMARY OF SOIL SAMPLE DETECTIONS - DIOXINS/FURANS AND PESTICIDES

SAMPLE ID:		DF-6(0-6)-100317 DUP	DF-7(0-6)-100317	DF-BLDG5(0-6)-100317	DF-L66(6-12)-100317
SAMPLE DEPTH (FT BGS)		0-0.5	0-0.5	0-0.5	0.5-1
COLLECTION DATE:		9/28/2017	9/28/2017	9/28/2017	9/28/2017
Lab Analyte	PAL	Result	Result	Result	Result
Dioxins/Furans (ug/kg)					
1,2,3,4,6,7,8-HPCDD	NE	1.32	0.134	0.29	0.351
1,2,3,4,6,7,8-HPCDF	NE	0.478	0.0807	0.0685	0.0853
1,2,3,4,7,8,9-HPCDF	NE	0.0523	0.00294 U	0.00406	0.00373
1,2,3,4,7,8-HXCDD	NE	0.0344	0.00278	0.00336	0.00479
1,2,3,4,7,8-HXCDF	NE	0.153	0.0103	0.00812	0.00603
1,2,3,6,7,8-HXCDD	NE	0.143	0.007	0.0123	0.0181
1,2,3,6,7,8-HXCDF	NE	0.152	0.0062	0.00446	0.00341
1,2,3,7,8,9-HXCDD	NE	0.0813	0.00506	0.00876	0.0127
1,2,3,7,8,9-HXCDF	NE	0.0242	0.000511 U	0.000731 J	0.000462 U
1,2,3,7,8-PECDD	NE	0.0401	0.00208 J	0.00311	0.00328
1,2,3,7,8-PECDF	NE	0.029	0.00296	0.00253	0.00172 J
2,3,4,6,7,8-HXCDF	NE	0.308	0.00759	0.00733	0.00579
2,3,4,7,8-PECDF	NE	0.735	0.00557	0.00973	0.00501
2,3,7,8-TCDD	0.0048	*0.0131*	0.00276	0.00169	0.00238
2,3,7,8-TCDF	NE	0.0423	0.00316	0.00641	0.00344
OCDD	NE	11.8 J	1.25	3.26	2.15
OCDF	NE	0.836	0.159	0.147	0.184
TOTAL HEPTA-DIOXINS	NE	2.98	0.326	0.538	0.577
TOTAL HEPTA-FURANS	NE	1.14	0.178	0.16	0.205
TOTAL HEXA-DIOXINS	NE	1.34	0.0716	0.101 EMPC	0.116 EMPC
TOTAL HEXA-FURANS	NE	3.73 EMPC	0.091	0.111	0.0976 EMPC
TOTAL PENTA-DIOXINS	NE	0.554	0.0276 EMPC	0.0295 EMPC	0.0237 EMPC
TOTAL PENTA-FURANS	NE	7.12	0.0704	0.107 EMPC	0.0911
TOTAL TETRA-DIOXINS	NE	0.146 EMPC	0.016 EMPC	0.00803 EMPC	0.016 EMPC
TOTAL TETRA-FURANS	NE	2.51	0.0481 EMPC	0.0626 EMPC	0.0624
Pesticides (ug/kg)					
HEPTACHLOR EPOXIDE	10	–	–	–	–

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 4-1
UNVALIDATED TEMPORARY WELL POINT RESULTS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

SAMPLE ID: / COLLECTION DATE: / Lab Analyte	CAS	PAL	Units	TWP-B-7 10/18/2017 Result	TWP-B-7 10/18/2017 Result	TWP-B-8 10/18/2017 Result	TWP-B-9 10/18/2017 Result	TWP-B-11 10/18/2017 Result	TWP-B-13 10/12/2017 Result	TWP-B-13 10/12/2017 Result	TWP-B-18 10/13/2017 Result	TWP-B-20 10/18/2017 Result	TWP-B-28 10/24/2017 Result	TWP-B-30 10/26/2017 Result	TWP-B-30 10/26/2017 Result	TWP-B-31 10/18/2017 Result	TWP-B-32 10/05/2017 Result	TWP-B-34 10/24/2017 Result	TWP-B-34 10/24/2017 Result
Metals by ISM02.4 (µg/l)																			
MERCURY	7439-97-6	0.63	µg/l	0.47	--	*5.8*	--	*2.3*	0.2 U	--	0.2 U	0.23	0.085 J	0.26	--	0.33	0.47	0.2 U	--
ALUMINUM	7429-90-5	200	µg/l	*395*	--	*8760 D*	--	*4330 D*	*330*	--	*262*	*9390 D*	*298*	*671*	--	*454*	*1570*	79.8	--
ANTIMONY	7440-36-0	6	µg/l	3.5	--	5.5	--	3.6	0.26 J	--	0.96 J	0.63 J	0.96 J	2.5	--	1.1 J	2.6	0.9 J	--
ARSENIC	7440-38-2	0.052	µg/l	*8.1*	--	*25.5 D*	--	*10*	*0.64 J*	--	*24.8*	*3.4 D*	*4.2*	*5.8*	--	*7.9*	*38.3*	*4.2*	--
BARIUM	7440-39-3	2000	µg/l	*3730*	--	*3440*	--	802	149	--	201	300	334	237	--	1360	1520	573	--
BERYLLIUM	7440-41-7	1	µg/l	0.14 J	--	*1.2*	--	0.63 J	1 U	--	1 U	*1.2*	1 U	0.06 J	--	0.1 J	0.16 J	1 U	--
CADMIUM	7440-43-9	4	µg/l	0.34 J	--	3	--	1.5	1 U	--	1 U	0.3 J	0.13 J	0.83 J	--	0.77 J	2.5	0.2 J	--
CALCIUM	7440-70-2	No Action	µg/l	861000	--	2190000 D	--	207000	104000	--	86600	74000	110000	69300	--	56100	75100	129000	--
CHROMIUM, TOTAL	7440-47-3	70	µg/l	17.8	--	*100 D*	--	34.5 D	1.3 J	--	5.2	8.4 D	15 J	8.6	--	10.4	23.6	1.6 J	--
COBALT	7440-48-4	6	µg/l	5.5	--	*16.3 D*	--	*7.7 D*	0.77 J	--	0.43 U	*12 D*	0.77 J	1.7	--	0.66 U	2.5	3.9	--
COPPER	7440-50-8	800	µg/l	27.4	--	135 D	--	141 D	3.9	--	2.7	38.9 D	9.4	37.2	--	18.7	42.2	4.3	--
IRON	7439-89-6	300	µg/l	*92800*	--	*722000 D*	--	*11700 D*	*5420*	--	*18500*	*12700 D*	*9780*	*7260*	--	*3830*	*19700*	*25900*	--
LEAD	7439-92-1	5	µg/l	*69.1*	--	*801*	--	*349*	3.5	--	3	*32.7*	*37.3*	*222*	--	*442*	*1050 D*	*25*	--
MAGNESIUM	7439-95-4	No Action	µg/l	83100	--	186000 D	--	155000 D	15400	--	16300	9050 D	16500	15800	--	8000	24700	10700	--
MANGANESE	7439-96-5	50	µg/l	*20100 D*	--	*27000 D*	--	*1640 D*	*1750*	--	*1670*	*3480 D*	*781*	*1720*	--	*710*	*2360 D*	*1390*	--
NICKEL	7440-02-0	100	µg/l	17.7	--	43.9 D	--	22.1 D	1.4	--	0.97 J	12.2 D	1.8	5.8	--	2.3	8.4	2.1	--
POTASSIUM	7440-09-7	No Action	µg/l	36600	--	41400 D	--	43400 D	4220	--	53300	9820 D	14800	8220	--	5820	15900	15900	--
SELENIUM	7782-49-2	40	µg/l	1.1 J	--	7.1	--	0.96 J	0.17 J	--	5 U	4.6 J	1.6 J	1.5 J	--	0.86 J	1.6 J	2.5 J	--
SILVER	7440-22-4	40	µg/l	0.59 J	--	1	--	0.96 J	0.17 J	--	0.17 J	0.16 J	0.32 J	0.6 J	--	0.15 J	0.23 J	0.27 J	--
SODIUM	7440-23-5	50000	µg/l	*1940000 D*	--	*1020000 D*	--	*1490000 D*	*184000*	--	*228000*	*421000 D*	*87400*	*73000*	--	39200	*196000*	*78500*	--
THALLIUM	7440-28-0	0.2	µg/l	0.12 J	--	*0.24 J*	--	0.13 J	1 U	--	1 U	0.06 J	1 U	1 U	--	1 U	0.11 J	1 U	--
VANADIUM	7440-62-2	86	µg/l	2.2 J	--	26.8 D	--	16.4 D	1.4 J	--	0.99 J	15.2 D	2.3 J	4.8 J	--	1.3 J	7.6	1.8 J	--
ZINC	7440-66-6	2000	µg/l	178	--	827 D	--	437 D	156	--	12.9	68.4 D	47.6	389	--	488	1520	50.7	--
VOCs by SOM02.4TRACE (ug/l)																			
1,1,1-TRICHLOROETHANE	71-55-6	30	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.076	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	56000	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,1,2-TRICHLOROETHANE	79-00-5	0.28	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,1-DICHLOROETHANE	75-34-3	2.8	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,1-DICHLOROETHENE	75-35-4	1	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2,3-TRICHLOROBENZENE	87-61-6	7	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2,4-TRICHLOROBENZENE	120-82-1	1.2	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.00033	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	0.0075	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2-DICHLOROBENZENE	95-50-1	300	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2-DICHLOROETHANE	107-06-2	0.17	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,2-DICHLOROPROPANE	78-87-5	0.44	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,3-DICHLOROBENZENE	541-73-1	600	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
1,4-DICHLOROBENZENE	106-46-7	0.48	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
2-HEXANONE	591-78-6	38	µg/l	5.0 U	--	250 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	20 U	200 U	--	20 U	5.0 U	200 U	--
ACETONE	67-64-1	6000	µg/l	--	1200 D	--	*30000 D*	5.0 U	12	--	8.9	10	20 U	200 U	--	20 U	5.0 U	200 U	--
BENZENE	71-43-2	0.46	µg/l	*1.2*	--	*19 J*	--	0.50 U	0.50 U	--	0.31 J	0.50 U	2.0 U	20 U	--	*1.3 J*	*12*	*40*	--
BROMOCHLOROMETHANE	74-97-5	83	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
BROMODICHLOROMETHANE	75-27-4	0.13	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
BROMOFORM	75-25-2	3.9	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
BROMOMETHANE	74-83-9	7.5	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CARBON DISULFIDE	75-15-0	700	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.86	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CARBON TETRACHLORIDE	56-23-5	0.46	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CHLOROBENZENE	108-90-7	50	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	1.3 J	0.51	20 U	--
CHLOROETHANE	75-00-3	21000	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CHLOROFORM	67-66-3	0.22	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CHLOROMETHANE	74-87-3	150	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CIS-1,2-DICHLOROETHYLENE	156-59-2	36	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.47	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
CYCLOHEXANE	110-82-7	13000	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	0.92 J	0.54	20 U	--
DIBROMOCHLOROMETHANE	124-48-1	0.67	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
DICHLORODIFLUOROMETHANE	75-71-8	200	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
ETHYLBENZENE	100-41-4	1.5	µg/l	0.50 U	--	*83*	*72 JD*	0.50 U	*3*	*2.2 JD*	0.50 U	0.50 U	2.0 U	--	*2500 D*	*4.7*	0.50 U	--	*2100 D*
ISOPROPYLBENZENE (CUMENE)	98-82-8	450	µg/l	0.50 U	--	25 U	--	0.50 U	0.32 J	--	0.7	0.50 U	39	67	--	35	48	110	--
M,P XYLENES	179601-23-1	150	µg/l	0.50 U	--	*320*	*250 D*	0.50 U	--	17 D	5.7	0.50 U	2.0 U	--	*9200 D*	9.1	2	--	*7000 D*
METHYL ACETATE	79-20-9	7000	µg/l	0.50 U	--	--	2600 D	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	300	µg/l	5.0 U	--	250 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	20 U	200 U	--	20 U	5.0 U	200 U	--
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108-10-1	6300	µg/l	5.0 U	--	360	380 JD	5.0 U	5.0 U	--	5.0 U	5.0 U	20 U	200 U	--	20 U	5.0 U	200 U	--
METHYLCYCLOHEXANE	108-87-2	No Action	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	11	41	--	31	7.7	71	--
METHYLENE CHLORIDE	75-09-2	3	µg/l	0.50 U	--	*28 B*	--	0.50 U	0.34 JB	--	0.50 U	0.50 U	2.0 U	*17 JB*	--	2.0 U	0.50 U	20 U	--
O-XYLENE (1,2-DIMETHYLBENZENE)	95-47-6	150	µg/l	0.50 U	--	59	52 JD	0.50 U	9.8	6 D	0.24 J	0.50 U	2.0 U	*650*	*720 D*	2.9	2.8	--	*620 D*
STYRENE	100-42-5	100	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
TERT-BUTYL METHYL ETHER	1634-04-4	14	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
TETRACHLOROETHYLENE(PCE)	127-18-4	1	µg/l	0.50 U	--	25 U	--	0.23 J	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
TOLUENE	108-88-3	600	µg/l	0.5	--	*700*	*610 D*	0.50 U	5.5	3.9 D	0.2 J	0.50 U	0.88 J	14 J	--	1.6 J	1.5	30	--
TRANS-1,2-DICHLOROETHENE	156-60-5	100	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.47	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
TRICHLOROETHYLENE (TCE)	79-01-6	0.49	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
TRICHLOROFLUOROMETHANE	75-69-4	2000	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--
VINYL CHLORIDE	75-01-4	0.019	µg/l	0.50 U	--	25 U	--	0.50 U	0.50 U	--	0.50 U	0.50 U	2.0 U	20 U	--	2.0 U	0.50 U	20 U	--

TABLE 4-1
UNVALIDATED TEMPORARY WELL POINT RESULTS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

SAMPLE ID: / COLLECTION DATE: / Lab Analyte	CAS	PAL	Units	TWP-B-7 10/18/2017 Result	TWP-B-7 10/18/2017 Result	TWP-B-8 10/18/2017 Result	TWP-B-9 10/18/2017 Result	TWP-B-11 10/18/2017 Result	TWP-B-13 10/12/2017 Result	TWP-B-13 10/12/2017 Result	TWP-B-18 10/13/2017 Result	TWP-B-20 10/18/2017 Result	TWP-B-28 10/14/2017 Result	TWP-B-30 10/26/2017 Result	TWP-B-30 10/26/2017 Result	TWP-B-31 10/18/2017 Result	TWP-B-32 10/05/2017 Result	TWP-B-34 10/24/2017 Result	TWP-B-34 10/24/2017 Result
SVOCs by SOM02.4_SVOC (ug/l)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1.7	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
1,4-DIOXANE (P-DIOXANE)	123-91-1	0.46	ug/l	1.6 J	--	2 U	--	1.5 J	2 U	--	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	--
2,3,4,6-TETRACHLOROPHENOL	58-90-2	200	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2,4,5-TRICHLOROPHENOL	95-95-4	700	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2,4,6-TRICHLOROPHENOL	88-06-2	4.1	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2,4-DICHLOROPHENOL	120-83-2	20	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2,4-DIMETHYLPHENOL	105-67-9	100	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2,4-DINITROPHENOL	51-28-5	39	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
2,4-DINITROTOLUENE	121-14-2	0.24	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2,6-DINITROTOLUENE	606-20-2	0.049	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2-CHLORONAPHTHALENE	91-58-7	600	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2-CHLOROPHENOL	95-57-8	40	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2-METHYLNAPHTHALENE	91-57-6	36	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	29	--	5 U	17 J	23	--
2-METHYLPHENOL (O-CRESOL)	95-48-7	930	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
2-NITROANILINE	88-74-4	190	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
2-NITROPHENOL	88-75-5	No Action	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
3,3'-DICHLOROBENZIDINE	91-94-1	0.13	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
3-NITROANILINE	99-09-2	No Action	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1.3	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
4-BROMOPHENYL PHENYL ETHER	101-55-3	No Action	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
4-CHLORO-3-METHYLPHENOL	59-50-7	1400	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
4-CHLOROANILINE	106-47-8	0.37	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	No Action	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
4-METHYLPHENOL (P-CRESOL)	106-44-5	1900	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
4-NITROANILINE	100-01-6	3.8	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
4-NITROPHENOL	100-02-7	No Action	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
ACENAPHTHENE	83-32-9	400	ug/l	5 U	--	3.4 J	--	5 U	5 U	--	5 U	5 U	12	1.3 J	--	5 U	10	5 U	--
ACENAPHTHYLENE	208-96-8	No Action	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
ACETOPHENONE	98-86-2	700	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	2 J	--	10 U	10 U	10 U	--
ANTHRACENE	120-12-7	1800	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
ATRAZINE	1912-24-9	0.3	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
BENZALDEHYDE	100-52-7	19	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
BENZO(A)ANTHRACENE	56-55-3	0.012	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BENZO(A)PYRENE	50-32-8	0.0034	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BENZO(B)FLUORANTHENE	205-99-2	0.034	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BENZO(G,H,I)PERYLENE	191-24-2	No Action	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BENZO(K)FLUORANTHENE	207-08-9	0.34	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BENZYL BUTYL PHTHALATE	85-68-7	16	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BIPHENYL (DIPHENYL)	92-52-4	0.69	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	1.3 J	--	5 U	5 U	1.3 J	--
BIS(2-CHLOROETHOXY) METHANE	111-91-1	59	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	111-44-4	0.014	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	300	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	3	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
CAPROLACTAM	105-60-2	9800	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
CARBAZOLE	86-74-8	No Action	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	14 J	--
CHRYSENE	218-01-9	3.4	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
DIBENZ(A,H)ANTHRACENE	53-70-3	0.0034	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
DIBENZOFURAN	132-64-9	7.9	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	4.8 J	5 U	--
DIETHYL PHTHALATE	84-66-2	6000	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
DIMETHYL PHTHALATE	131-11-3	No Action	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	3 J	--	5 U	5 U	3.3 J	--
DI-N-BUTYL PHTHALATE	84-74-2	700	ug/l	1.6 J	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
DI-N-OCTYLPHTHALATE	117-84-0	100	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
FLUORANTHENE	206-44-0	300	ug/l	10 U	--	2.1 J	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	2.9 J	10 U	--
FLUORENE	86-73-7	290	ug/l	5 U	--	1.9 J	--	5 U	5 U	--	5 U	5 U	4.5 J	1.1 J	--	5 U	5.7	5 U	--
HEXACHLOROBENZENE	118-74-1	0.0098	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
HEXACHLOROBUTADIENE	87-68-3	0.14	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.41	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
HEXACHLOROETHANE	67-72-1	0.33	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
INDENO(1,2,3-C,D)PYRENE	193-39-5	0.034	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
ISOPHORONE	78-59-1	40	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
NAPHTHALENE	91-20-3	0.17	ug/l	5 U	--	3.4 J	--	5 U	5 U	--	5 U	5 U	5 U	18	--	1.6 J	1.7 J	28	--
NITROBENZENE	98-95-3	0.14	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	2 U	--	5 U	5 U	5 U	--
N-NITROSODI-N-PROPYLAMINE	621-64-7	0.011	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
N-NITROSODIPHENYLAMINE	86-30-6	10	ug/l	5 U	--	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	--
PENTACHLOROPHENOL	87-86-5	0.041	ug/l	10 U	--	1.9 J	--	10 U	10 U	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	--
PHENANTHRENE	85-01-8	No Action	ug/l	5 U	--	5.3	--	5 U	5 U	--	5 U	5 U	15 J	3.8 J	--	5 U	8.9	1.5 J	--
PHENOL	108-95-2	2000	ug/l	10 U	--	10 U	--	10 U	10 U	--	10 U	10 U	10 U	8.1 J	--	10 U	10 U	10 U	--
PYRENE	129-00-0	120	ug/l	5 U	--	2.6 J	--	5 U	5 U	--	5 U	5 U	5 U	5 U	--	5 U	1.9 J	5 U	--

TABLE 4-1
UNVALIDATED TEMPORARY WELL POINT RESULTS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

SAMPLE ID: COLLECTION DATE: Lab Analyte	CAS	PAL	Units	TWP-B-7 10/18/2017 Result	TWP-B-7 10/18/2017 Result	TWP-B-8 10/18/2017 Result	TWP-B-9 10/18/2017 Result	TWP-B-11 10/18/2017 Result	TWP-B-13 10/12/2017 Result	TWP-B-12 10/12/2017 Result	TWP-B-18 10/13/2017 Result	TWP-B-20 10/18/2017 Result	TWP-B-28 10/24/2017 Result	TWP-B-30 10/26/2017 Result	TWP-B-30 10/26/2017 Result	TWP-B-31 10/18/2017 Result	TWP-B-32 10/05/2017 Result	TWP-B-34 10/24/2017 Result	TWP-B-34 10/24/2017 Result
Cyanide by SW9012B (µg/l)																			
CYANIDE	57-12-5	1.5	µg/l	5.0 U	–	3 J	–	5.0 U	5.0 U	–	5.0 U	5.0 U	5	5.2	–	37	6	5.0 U	–
PCBs by SW8082 (µg/l)																			
CHLOROBIPHENYL	37324-23-5	0.5	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1016 (AROCLOR 1016)	12674-11-2	0.22	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1221 (AROCLOR 1221)	11104-28-2	0.0047	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1232 (AROCLOR 1232)	11141-16-5	0.0047	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1242 (AROCLOR 1242)	53469-21-9	0.0078	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1248 (AROCLOR 1248)	12672-29-6	0.0078	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1254 (AROCLOR 1254)	11097-69-1	0.0078	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1260 (AROCLOR 1260)	11096-82-5	0.0078	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–
PCB-1268 (AROCLOR 1268)	11100-14-4	0.5	µg/l	0.5 U	–	0.5 U	–	0.5 U	0.5 U	–	0.5 U	0.5 U	0.5 U	0.5 U	–	0.5 U	0.05 U	0.5 U	–

TABLE 4-1
UNVALIDATED TEMPORARY WELL POINT RESULTS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

SAMPLE ID: / COLLECTION DATE: / Lab Analyte	CAS	PAL	Units	TWP-B-38 10/11/2017 Result	TWP-B-39 10/03/2017 Result	TWP-B-42 10/03/2017 Result	TWP-B-44 10/03/2017 Result	TWP-B-44 10/03/2017 Result	TWP-B-51 10/26/2017 Result	TWP-B-55 10/05/2017 Result	TWP-B-57 10/05/2017 Result	TWP-B-59 10/05/2017 Result	TWP-B-61 10/11/2017 Result	TWP-B-63 10/11/2017 Result	TWP-B-67 10/16/2017 Result	TWP-B-68 10/25/2017 Result	TWP-B-70 10/25/2017 Result	TWP-B-75 10/25/2017 Result	TWP-B-75 10/25/2017 Result
Metals by ISM02.4 (µg/l)																			
MERCURY	7439-97-6	0.63	µg/l	0.12 J	0.058 J	3.9	0.031 J	--	0.66	0.2 U	0.024 J	0.2 U	0.072 J	0.092 J	0.4	0.026 J	1	0.2 U	--
ALUMINUM	7429-90-5	200	µg/l	1140	470	2150	252	--	1040	275	241	178	392	1030	221	1020	119 J	57.2	--
ANTIMONY	7440-36-0	6	µg/l	1.1 J	0.74 J	2.6	0.89 J	--	2.3	0.43 J	0.41 J	0.86 J	6.7	0.9 J	3.6	1.4 J	0.42 J	0.4 J	--
ARSENIC	7440-38-2	0.052	µg/l	1.7	2.1	12.5	2.9	--	3.6	1.6	0.58 J	1.9	12.9	1.7	6.6	5.3	2.5	1.7	--
BARIUM	7440-39-3	2000	µg/l	924	174	392	299	--	757	224	284	252	613	915	1870	343	634	367	--
BERYLLIUM	7440-41-7	1	µg/l	0.09 J	0.06 J	0.16 J	1 U	--	0.11 J	0.05 J	0.04 J	0.06 J	1 U	0.09 J	0.11 J	0.13 J	1 U	0.04 J	--
CADMIUM	7440-43-9	4	µg/l	0.37 J	0.05 J	0.32 J	0.3 J	--	0.58 J	0.09 J	1 U	0.05 J	0.1 J	0.26 J	0.39 J	0.2 J	0.51 J	1 U	--
CALCIUM	7440-70-2	No Action	µg/l	98800	120000	48200	182000	--	261000	136000	173000	110000	94500	96200	156000	114000	37500	122000	--
CHROMIUM, TOTAL	7440-47-3	70	µg/l	8.2	1.6 J	14.1	2	--	20.8	1 J	1.1 J	1 J	3.1	7.8	11.5	4	1.6 J	0.73 J	--
COBALT	7440-48-4	6	µg/l	1.8	1.4	3.7	0.81 J	--	3.7	0.54 J	0.81 J	1.2	2.5	1.7	4.3	1.8	1.7	0.9 J	--
COPPER	7440-50-8	800	µg/l	16.2	7.7	74.4	5.5	--	29.2	3.5	3.1	3.1	14.8	15	15.4	20	15	15 J	--
IRON	7439-89-6	300	µg/l	11600	11200	15000	43000	--	36900	30300	15300	20500	15400	11500	37600	16700	944	20300	--
LEAD	7439-92-1	5	µg/l	37.4	9.4	411	150	--	121	5.6	2.9	5.2	73.2	52.5	444	92.3	37.3	4.6	--
MAGNESIUM	7439-95-4	No Action	µg/l	46500	13700	7590	23400	--	273000	15600	17200	11400	32600	46500	26900	14000	4970	15900	--
MANGANESE	7439-96-5	50	µg/l	873	1490	385	644	--	1450	1360	2240 D	3070 D	1270	881	655	825	493	1110	--
NICKEL	7440-02-0	100	µg/l	4	3.4	7	2.4	--	9.7	1.3	4.5	2	3.6	3.7	4.9	3.4	1.6	1.5	--
POTASSIUM	7440-09-7	No Action	µg/l	18300	8260	8370	8000	--	82500	17800	12400	10800	12500	18200	15300	11700	2470	13900	--
SELENIUM	7782-49-2	40	µg/l	0.5 J	2.2 J	2.6 J	2.2 J	--	12.7	1.3 J	1.1 J	2.6 J	0.46 J	0.87 J	2.1 J	0.77 J	0.88 J	1.7 J	--
SILVER	7440-22-4	40	µg/l	0.4 J	0.12 J	0.34 J	0.14 J	--	0.81 J	0.09 J	0.09 J	0.12 J	0.44 J	0.34 J	0.41 J	0.25 J	0.34 J	0.27 J	--
SODIUM	7440-23-5	50000	µg/l	446000	134000	55700	25800	--	2490000 D	31900	92200	71800	323000	446000	364000	90200	33800	83000	--
THALLIUM	7440-28-0	0.2	µg/l	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.25 J	1 U	1 U	--
VANADIUM	7440-62-2	86	µg/l	3 J	4.2 J	5.9	1.1 U	--	7	1.4 J	1.3 J	1.2 J	1.3 J	2.9 J	2.6 J	6.3	0.92 J	1.5 J	--
ZINC	7440-66-6	2000	µg/l	120	26.2	280	101	--	149	29	8.3	14.8	80.2	107	334	117	371	22.7	--
VOCs by SOM02.4TRACE (ug/l)																			
1,1,1-TRICHLOROETHANE	71-55-6	30	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.9	1.0 U	0.50 U	0.50 U	2.0 U	--
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.076	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	56000	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,1,2-TRICHLOROETHANE	79-00-5	0.28	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,1-DICHLOROETHANE	75-34-3	2.8	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.31 J	1.0 U	0.50 U	0.50 U	2.0 U	--
1,1-DICHLOROETHENE	75-35-4	1	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2,3-TRICHLOROBENZENE	87-61-6	7	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2,4-TRICHLOROBENZENE	120-82-1	1.2	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.00033	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	0.0075	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2-DICHLOROBENZENE	95-50-1	300	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2-DICHLOROETHANE	107-06-2	0.17	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,2-DICHLOROPROPANE	78-87-5	0.44	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,3-DICHLOROBENZENE	541-73-1	600	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
1,4-DICHLOROBENZENE	106-46-7	0.48	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
2-HEXANONE	591-78-6	38	µg/l	20 U	10 U	10 U	5.0 U	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	20 U	--
ACETONE	67-64-1	6000	µg/l	20 U	14	4.3 J	2.7 J	--	5.0 U	5.0 U	5.0 U	19	41	81	9.1 J	3.1 J	3.4 J	20 U	--
BENZENE	71-43-2	0.46	µg/l	0.84 J	0.92 J	1.0 U	0.50 U	--	0.79	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	20	20 D
BROMOCHLOROMETHANE	74-97-5	83	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
BROMODICHLOROMETHANE	75-27-4	0.13	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
BROMOFORM	75-25-2	3.9	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
BROMOMETHANE	74-83-9	7.5	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CARBON DISULFIDE	75-15-0	700	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CARBON TETRACHLORIDE	56-23-5	0.46	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CHLOROBENZENE	108-90-7	50	µg/l	2.0 U	1.1	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.31 J	0.50 U	0.50 U	1.6	0.50 U	0.50 U	2.0 U	--
CHLOROETHANE	75-00-3	21000	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.87	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CHLOROFORM	67-66-3	0.22	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CHLOROMETHANE	74-87-3	150	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CIS-1,2-DICHLOROETHYLENE	156-59-2	36	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.47	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
CYCLOHEXANE	110-82-7	13000	µg/l	1 J	1.0 U	0.8 J	0.50 U	--	0.23 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.2	0.50 U	15	15 D
DIBROMOCHLOROMETHANE	124-48-1	0.67	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
DICHLORODIFLUOROMETHANE	75-71-8	200	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.56 U	0.50 U	2.0 U	--
ETHYLBENZENE	100-41-4	1.5	µg/l	1.4 J	1.0 U	1.0 U	4.7	3.6 D	1.3	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
ISOPROPYLBENZENE (CUMENE)	98-82-8	450	µg/l	54	12	13	1.3	1.1 JD	1.1	0.50 U	0.50 U	0.56	0.50 U	0.50 U	28	0.50 U	61	--	100 D
M,P-XYLENES	179601-23-1	150	µg/l	2.3	1.0 U	0.54 J	--	50 D	2.9	0.50 U	0.50 U	0.21 J	0.50 U	0.50 U	2.6	0.23 J	0.3 J	0.88 J	--
METHYL ACETATE	79-20-9	7000	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	300	µg/l	20 U	10 U	10 U	5.0 U	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	20 U	--
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108-10-1	6300	µg/l	20 U	10 U	10 U	5.0 U	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	20 U	--
METHYLCYCLOHEXANE	108-87-2	No Action	µg/l	59	10 U	5	0.32 J	--	0.59 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.8	5.6	0.87	--	100 D
METHYLENE CHLORIDE	75-09-2	3	µg/l	1.4 JB	1.0 U	1.3 B	0.50 U	2.5 DB	0.31 JB	0.50 U	0.50 U	0.50 U	0.39 JB	0.50 U	0.46 J	0.74 B	0.50 U	1.2 JB	--
O-XYLENE (1,2-DIMETHYLBENZENE)	95-47-6	150	µg/l	0.96 J	1.0 U	1.0 U	--	1.9 D	0.77	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.27 J	0.50 U	8.4	8 D
STYRENE	100-42-5	100	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
TERT-BUTYL METHYL ETHER	1634-04-4	14	µg/l	2.0 U	0.65 J	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
TETRACHLOROETHYLENE (PCE)	127-18-4	1	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.5 J	0.50 U	2.0 U	--
TOLUENE	108-88-3	600	µg/l	2.0 U	1.0 U	1.0 U	0.46 J	--	0.3 J	0.50 U	0.31 J	0.22 J	0.63	0.50 U	0.82 J	0.50 U	0.50 U	2.0 U	--
TRANS-1,2-DICHLOROETHENE	156-60-5	100	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.47	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
TRICHLOROETHYLENE (TCE)	79-01-6	0.49	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
TRICHLOROFLUOROMETHANE	75-69-4	2000	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--
VINYL CHLORIDE	75-01-4	0.019	µg/l	2.0 U	1.0 U	1.0 U	0.50 U	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	2.0 U	--

TABLE 4-1
UNVALIDATED TEMPORARY WELL POINT RESULTS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

SAMPLE ID: / COLLECTION DATE: / Lab Analyte	CAS	PAL	Units	TWP-B-38 10/11/2017 Result	TWP-B-39 10/03/2017 Result	TWP-B-42 10/03/2017 Result	TWP-B-44 10/03/2017 Result	TWP-B-44 10/03/2017 Result	TWP-B-51 10/26/2017 Result	TWP-B-55 10/05/2017 Result	TWP-B-57 10/05/2017 Result	TWP-B-58 10/05/2017 Result	TWP-B-61 10/11/2017 Result	TWP-B-63 10/11/2017 Result	TWP-B-67 10/16/2017 Result	TWP-B-68 10/25/2017 Result	TWP-B-70 10/25/2017 Result	TWP-B-75 10/25/2017 Result	TWP-B-75 10/25/2017 Result
SVOCs by SOM02.4_SVOC (ug/l)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1.7	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
1,4-DIOXANE (P-DIOXANE)	123-91-1	0.46	ug/l	2 U	2 U	2 U	2 U	--	2 U	2	1.6 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--
2,3,4,6-TETRACHLOROPHENOL	58-90-2	200	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2,4,5-TRICHLOROPHENOL	95-95-4	700	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2,4,6-TRICHLOROPHENOL	88-06-2	4.1	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2,4-DICHLOROPHENOL	120-83-2	20	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2,4-DIMETHYLPHENOL	105-67-9	100	ug/l	5 U	9	5 U	3.3 J	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2,4-DINITROPHENOL	51-28-5	39	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
2,4-DINITROTOLUENE	121-14-2	0.24	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2,6-DINITROTOLUENE	606-20-2	0.049	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2-CHLORONAPHTHALENE	91-58-7	600	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2-CHLOROPHENOL	95-57-8	40	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2-METHYLNAPHTHALENE	91-57-6	35	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2-METHYLPHENOL (O-CRESOL)	95-48-7	930	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
2-NITROANILINE	88-74-4	190	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
2-NITROPHENOL	88-75-5	No Action	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
3,3'-DICHLOROBENZIDINE	91-94-1	0.13	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
3-NITROANILINE	99-09-2	No Action	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1.3	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
4-BROMOPHENYL PHENYL ETHER	101-55-3	No Action	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
4-CHLORO-3-METHYLPHENOL	59-50-7	1400	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
4-CHLOROANILINE	106-47-8	0.37	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	No Action	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
4-METHYLPHENOL (P-CRESOL)	106-44-5	1900	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
4-NITROANILINE	100-01-6	3.8	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
4-NITROPHENOL	100-02-7	No Action	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
ACENAPHTHENE	83-32-9	400	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	2.1 J	5 U	5 U	5 U	1.7 J	5 U	5 U	5 U	--
ACENAPHTHYLENE	208-96-8	No Action	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
ACETOPHENONE	98-86-2	700	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
ANTHRACENE	120-12-7	1800	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
ATRAZINE	1912-24-9	0.3	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
BENZALDEHYDE	100-52-7	19	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
BENZO(A)ANTHRACENE	56-55-3	0.012	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BENZO(A)PYRENE	50-32-8	0.0034	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BENZO(B)FLUORANTHENE	205-99-2	0.034	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BENZO(G,H,I)PERYLENE	191-24-2	No Action	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BENZO(K)FLUORANTHENE	207-08-9	0.34	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BENZYL BUTYL PHTHALATE	85-68-7	16	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BIPHENYL (DIPHENYL)	92-52-4	0.53	ug/l	5 U	5 U	5 U	5 U	--	2.7 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BIS(2-CHLOROETHOXY) METHANE	111-91-1	59	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	111-44-4	0.014	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	300	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	3	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
CAPROLACTAM	105-60-2	9800	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
CARBAZOLE	86-74-8	No Action	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
CHRYSENE	218-01-9	3.4	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
DIBENZ(A,H)ANTHRACENE	53-70-3	0.0034	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
DIBENZOFURAN	132-64-9	7.9	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
DIETHYL PHTHALATE	84-66-2	6000	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
DIMETHYL PHTHALATE	131-11-3	No Action	ug/l	5 U	7.6	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
DI-N-BUTYL PHTHALATE	84-74-2	700	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
DI-N-OCTYLPHTHALATE	117-84-0	100	ug/l	10 U	13 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
FLUORANTHENE	206-44-0	300	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
FLUORENE	86-73-7	290	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
HEXACHLOROBENZENE	118-74-1	0.0098	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
HEXACHLOROBUTADIENE	87-68-3	0.14	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.41	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
HEXACHLOROETHANE	67-72-1	0.33	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
INDENO(1,2,3-C,D)PYRENE	193-39-5	0.034	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
ISOPHORONE	78-59-1	40	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
NAPHTHALENE	91-20-3	0.17	ug/l	5 U	5 U	5 U	5 U	--	2.6 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
NITROBENZENE	98-95-3	0.14	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
N-NITROSODI-N-PROPYLAMINE	621-64-7	0.011	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
N-NITROSODIPHENYLAMINE	86-30-6	10	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
PENTACHLOROPHENOL	87-86-5	0.041	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	5.7 J	10 U	10 U	10 U	--
PHENANTHRENE	85-01-8	No Action	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
PHENOL	108-95-2	2000	ug/l	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--
PYRENE	129-00-0	120	ug/l	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--

TABLE 4-1
UNVALIDATED TEMPORARY WELL POINT RESULTS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

SAMPLE ID: / COLLECTION DATE: / Lab Analyte	CAS	PAL	Units	TWP-B-38 10/11/2017 Result	TWP-B-39 10/03/2017 Result	TWP-B-42 10/03/2017 Result	TWP-B-44 10/03/2017 Result	TWP-B-44 10/03/2017 Result	TWP-B-51 10/26/2017 Result	TWP-B-52 10/05/2017 Result	TWP-B-57 10/05/2017 Result	TWP-B-58 10/05/2017 Result	TWP-B-61 10/11/2017 Result	TWP-B-63 10/11/2017 Result	TWP-B-67 10/16/2017 Result	TWP-B-68 10/25/2017 Result	TWP-B-70 10/25/2017 Result	TWP-B-75 10/25/2017 Result	TWP-B-75 10/25/2017 Result
Cyanide by SW9012B (µg/l)																			
CYANIDE	57-12-5	1.5	µg/l	5	5 U	7	10	--	5 U	5 U	5 U	5 U	5 U	5 U	21	5 J	4 J	5 U	--
PCBs by SW8082 (µg/l)																			
CHLOROBIPHENYL	37324-23-5	0.5	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1016 (AROCLOR 1016)	12674-11-2	0.22	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1221 (AROCLOR 1221)	11104-28-2	0.0047	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1232 (AROCLOR 1232)	11141-16-5	0.0047	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1242 (AROCLOR 1242)	53469-21-9	0.0078	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1248 (AROCLOR 1248)	12672-29-6	0.0078	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1254 (AROCLOR 1254)	11097-69-1	0.0078	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1260 (AROCLOR 1260)	11096-82-5	0.0078	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--
PCB-1268 (AROCLOR 1268)	11100-14-4	0.5	µg/l	0.5 U	0.05 U	0.5051 U	0.5025 U	--	0.5 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.504 U	0.5 U	0.5045 U	--

Notes:
PAL - Project Action Limit
NE - PAL Not Established
Detected result exceeds PAL
Reporting Limit exceeds PAL
J - Estimated Value, result >MDL and <RL
U - Not detected above the laboratory reporting limit
D - Result is from a diluted sample
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample
Each field sample represented by one or more columns is due to diluted results or reanalyzes reported by the laboratory. Multiple analytical runs are reported since data were not validated (per the QAPP) to assign a final reportable value.
"µg/l" - micrograms per liter

TABLE 5-1
CONTAINER INVENTORY SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY
As of November 30, 2017

Overview of Buildings Inventoried
Building #6 – 1 floor
Building #7 – 3 floors and basement
Building #12 – 5 floors and basement
Building #17 – 2 floors
Building #15 – 1 floor with pumphouse basement

Containers with contents to be sampled:

Building #	Lot #	Floor	Number of Containers	Comments
7	63	1	1	Tank ¾ full of solid material. Tank/hopper is suspended above first floor. It is not open at bottom, but open from top on second floor ~5 feet from floor 2 level. The opening at the second floor is ~12 inches in diameter.
12	64	Basement	1	55-gallon plastic drum ~ ½ full with liquids.
17	65	Basement	1	5-gallon bucket with label of filler and sealer ~1/2 full.

Empty Containers that were inventoried but will not be sampled:

Building #	Lot #	Floor	Number of Containers	Comments
7	63	1	8	Empty drums (plastic or metal). Some are floating in basement water.
7	63	1	4	Compressed gas tanks.
7	63	1	3	Empty carboys.
7	63	2	1	Bucket with dried coating
7	63	3	67	Empty tanks of various sizes. Tanks have been cut open or have a port that was opened for viewing inside to confirm contents.
7	63	3	1	Empty 55-gallon plastic drum.
17	65	Basement	2	Empty tanks one, large rubber tank, and one metal tank with two pumps inside of tank.
17	65	Basement	1	Compressed gas tank
17	65	1	2	Empty mixers.
17	65	2	0	No containers.
6	61	1	9	Empty 55-gallon plastic drums.
12	64	Basement	5	Empty 55-gallon plastic and metal drums.
12	64	Basement	1	Empty tank in back room.
12	64	1	1	Empty 55-gallon plastic drum.
12	64	2	0	No containers.
12	64	3	0	No containers.
12	64	4	5	Empty bottoms of tanks coming down from celling. 4 of the tanks were cut at floor level with 3 of them being able to be seen inside on the 5th floor the last tank of the 4 has a steel plate over it. The last tank that was not cut at floor level has a square screened opening at the top and is empty.
12	64	5	0	Only tanks that are described from the 4th floor are located on the 5th floor. See 4th floor comments.

Miscellaneous items to be sampled:

Building #	Lot #	Floor	Number of Containers	Comments
15	64	1	16	Due to deterioration/corrosion of interior walk surfaces and over 3 feet of water around tank bases, no observation of tank contents. Unsafe access to tank tops for observations based upon current conditions. Water surrounding the ASTs will be sampled.
15	59	Pumphouse basement	--	Petroleum/water mixture observed in area below floor grates. The basement is not a "container" but will be sampled.
17	65	Basement	1	Square cut in floor looks like a sump with water to surface and two pipes coming from different sides cut about 6 inches inside the square. The location is part of sump sample scope (Work Plan Section 6.1.14).
--	64	Underground Storage Tanks (USTs)	11	Based upon geophysics survey data eleven underground structures were identified. Actual number will be determined at time of sampling. Based upon historical maps there were 10 USTs in this area. In 2011, EPA contractor removed one or two USTs.
	68	Underground Storage Tank (UST)	1	Based upon geophysics survey data, a possible underground structure was identified. Actual presence will be determined at time of sampling. Based upon historical maps there were no USTs in this area.

TABLE 5-2

PHASE 1 USTs AND CONTAINER SAMPLE LIST
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Location	Phase 1 Sampling Location/Designation [a]	Number of Phase 1 Samples/Frequency [b]	Sample Material
Underground Storage Tank Samples			
Lot-64	UST-LOT 64-1_032018	1	Aqueous
Lot-64	UST-LOT 64-2_032118	1	Aqueous
Lot-64	UST-LOT 64-3_032118	1	Aqueous
Lot-64	UST-LOT 64-4_032218	1	Aqueous
Lot-64	UST-LOT 64-5_032218	1	Aqueous
Lot-64	UST-LOT 64-5_LNAPL_032218	1	Aqueous
Lot-64	UST-LOT 64-6_032218	1	Aqueous
Lot-64	UST-LOT 64-7_032318	1	Aqueous
Water Samples			
Building 15A	BLDG 15 LNAPL_032318	1	Aqueous
Building 15	BUILDING 15 WATER-1_032318	1	Aqueous
Building 15A	BUILDING 15-PH-1_032318	1	Aqueous
Waste Characterization Samples			
Building 12	CW-12-1_032018	1	Aqueous
Building 17	CW-17-1_032318	1	Aqueous
Building 7	CW-7-1_032318	1	Solid

NOTES:

a) Laboratory submitted USTs and container sample ID.

b) Number of samples collected from USTs or containers.

TABLE 3-3A

SUMMARY OF UST AND BUILDING 15/15A SAMPLE DETECTIONS - VOCs

SAMPLE ID:	BUILDING 15 WATER-1.032318	BUILDING 15-PH-1.032318	UST-LOT 64-1.032018	UST-LOT 64-2.032118	UST-LOT 64-3.032118	UST-LOT 64-4.032218	UST-LOT 64-5.032218	UST-LOT 64-6.032218	UST-LOT 64-7.032318
COLLECTION DATE:	3/23/2018	3/23/2018	3/20/2018	3/21/2018	3/21/2018	3/22/2018	3/22/2018	3/22/2018	3/23/2018
Lab Analyte	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/L)									
Acetone	33	19	17	200 U	20 U	500 U	32	50 U	410
Benzene	5 U	5 U	0.067 J	90 J	71 J	140 J	21 J	9.6 J	71
Carbon disulfide	5 U	5 U	0.3 U	100 U	10 U	34 JB	1.2 JB	25 U	50 U
Isopropylbenzene	5 U	5 U	1 U	82 J	33	170 J	19	25 U	61
Cyclohexane	5 U	5 U	3 U	26 J	9.7 J	250 U	1.4 J	25 U	50 U
1,1-Dichloroethane	5 U	5 U	0.071 J	100 U	10 U	250 U	10	25 U	120
cis-1,2-Dichloroethene	5 U	5 U	0.2 U	100 U	10 U	250 U	5 U	25 U	2000
Ethylbenzene	5 U	7.3	0.2 U	1700	720 D	8400	340 D	6.8 J	2400 D
2-Hexanone	10 U	10 U	3 U	200 U	20 U	500 U	10 U	50 U	90 J
2-Butanone	10 U	10 U	10 U	200 U	20 U	500 U	10 U	50 U	1700
4-Methyl-2-pentanone	10 U	10 U	5 U	200 U	20 U	15000	10 U	50 U	1200
Methyl tert-butyl ether	5 U	5 U	0.15 J	100 U	10 U	250 U	5 U	25 U	50 U
Methylcyclohexane	5 U	5 U	3 U	290 D	110 D	250 U	5 U	25 U	28 J
Methylene Chloride	5 U	5 U	5 U	100 U	10 U	250 U	0.91 J	25 U	50 U
Tetrachloroethene	5 U	5 U	0.5 U	100 U	10 U	250 U	1.3 J	25 U	50 U
Toluene	5 U	0.75 J	0.2 U	14 J	58	1300	44	3 J	1800
1,1,1-Trichloroethane	5 U	5 U	0.2 U	100 U	10 U	250 U	2.9 J	25 U	50 U
Trichloroethene	5 U	5 U	0.2 U	100 U	4.2 J	250 U	5 U	6.2 J	50 U
Vinyl chloride	5 U	5 U	0.02 U	100 U	10 U	250 U	5 U	25 U	450 B
m,p-Xylene	5 U	19	0.5 U	5300 D	1400 D	47000 D	1300 D	230	9900 D
o-Xylene	5 U	10	0.36 J	1100	510 D	17000 D	200 D	120	1500 D

Data Qualifiers

B - compound detected in a blank

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 3.3B

SUMMARY OF UST AND BUILDING 15/15A SAMPLE DETECTIONS - SVOCs

SAMPLE ID:	BUILDING 15 WATER-1.032318	BUILDING 15-PH-1.032318	UST-LOT 64-1.032018	UST-LOT 64-2.032118	UST-LOT 64-3.032118	UST-LOT 64-4.032218	UST-LOT 64-5.032218	UST-LOT 64-6.032218	UST-LOT 64-7.032318
COLLECTION DATE:	3/23/2018	3/23/2018	3/20/2018	3/21/2018	3/21/2018	3/22/2018	3/22/2018	3/22/2018	3/23/2018
Lab Analyte	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/L)									
Acenaphthene	4.8 U	24JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
Anthracene	4.8 U	40 JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
Benzo(a)anthracene	4.8 U	35JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
Benzo(a)pyrene	4.8 U	19 JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
1,1-Biphenyl	4.8 U	100 U	4.9 U	98 U	50 U	4.9 U	4.1 J	3 J	97 U
Bis(2-ethylhexyl)phthalate	4.8 U	100 U	4.9 U	98 U	68	4.9 U	19 U	4.9 U	92 JD
Carbazole	9.6 U	200 U	9.7 U	200 U	99 U	9.8 U	2.4 J	9.8 U	190 U
Chrysene	4.8 U	53 JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
2-Methylphenol	9.6 U	200 U	9.7 U	200 U	99 U	91	39 U	9.8 U	190 U
4-Methylphenol	0.82 J	200 U	9.7 U	200 U	99 U	520 D	39 U	9.8 U	1000 D
Diethylphthalate	4.8 U	100 U	4.9 U	98 U	2.2 JB	4.9 U	19 U	4.9 U	97 U
2,4-Dimethylphenol	3.4 J	100 U	4.9 U	39 J	50 U	510 D	19 U	4.9 U	97 U
1,4-Dioxane	1.9 U	40 U	1.9 U	60	19 J	8.5	2.8 J	2 U	5.3 JD
Fluoranthene	9.6 U	20 JD	9.7 U	200 U	99 U	9.8 U	39 U	9.8 U	190 U
Fluorene	4.8 U	44 JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
2-Methylnaphthalene	4.8 U	71 JD	4.9 U	50 J	10 J	4.9 U	56	49	34 JD
Naphthalene	0.88 J	6.3 JD	4.9 U	270	71	33	37	3200 D	47 JD
N-Nitrosodiphenylamine	4.8 U	86 JD	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
Phenanthrene	4.8 U	180 D	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
Phenol	9.6 U	200 U	2.3 J	200 U	99 U	9.8 U	39 U	9.8 U	370 D
Pyrene	4.8 U	130 D	4.9 U	98 U	50 U	4.9 U	19 U	4.9 U	97 U
2,3,4,6-Tetrachlorophenol	4.8 U	100 U	4.9 U	98 U	50 U	4.5 J	19 U	4.9 U	97 U

Data Qualifiers

B - Compound detected in blank sample

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 5.3C

SUMMARY OF UST AND BUILDING 15/15A SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:	BUILDING 15 WATER-1.032318	BUILDING 15-PH-1.032318	UST-LOT 64-1.032018	UST-LOT 64-2.032118	UST-LOT 64-3.032118	UST-LOT 64-4.032218	UST-LOT 64-5.032218	UST-LOT 64-6.032218	UST-LOT 64-7.032318
COLLECTION DATE:	3/23/2018	3/23/2018	3/20/2018	3/21/2018	3/21/2018	3/22/2018	3/22/2018	3/22/2018	3/23/2018
Lab Analyte	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/L)									
Aluminum	76.4	223	6.2 J	130	10200	117	21.6	28	1320
Antimony	2 U	2.1	0.39 J	0.57 J	1.8 J	0.82 J	0.54 J	2 U	1.1 J
Arsenic	3.9	19.7	31.7	19.5	30.8	31.1	19	15.2	18.5
Barium	28.9	408	598	626	1040	545	247	440	644
Beryllium	1 U	1 U	1 U	1 U	0.5 J	1 U	1 U	1 U	0.25 J
Cadmium	0.37 J	5	1 U	1 U	1.6	1.6	1 U	1 U	0.22 J
Calcium	47600	106000	259000	145000	80500	383000	225000	184000	208000
Chromium	0.78 J	8.4	11.5	51.8	1580	100	40.9	10.9	41.7
Cobalt	0.29 J	3.2	0.82 J	3.2	12.8	3.2	3	0.77 J	29.4
Copper	9.9	24.2	0.92 J	1.9 J	132	6	0.67 J	0.97 J	9.4
Iron	7950	2880	24600	1200	28500	25400	10800	10900	24500
Lead	12.6	121	0.73 J	9.9	551	135	2.6	7.8	203
Magnesium	86900	196000	97600	39900	8340	123000	35200	12100	23400
Manganese	359 B	216 B	710 B	2520 B	676 B	1230 B	5470 B	1920 B	3730 B
Mercury	0.2 U	2U	0.2 U	0.2 U	0.077 J	23.8	0.2 U	2U	0.63
Nickel	2.3	24.6	6.1	5.2	35.3	8.4	5.5	4	22.9
Potassium	67900 B	239000 B	74700 B	21400 B	19900 B	48700 B	15900 B	4320 B	30500 B
Selenium	11.5	49	94.8	57.5	71	92.6	58.5	45	40.5
Silver	1 U	0.054 J	1 U	1 U	0.28 J	1 U	1 U	1 U	0.033 J
Sodium	860000	1530000	208000	125000	69900	157000	67400	29200	116000
Thallium	0.18 J	1 U	1 U	1 U	0.16 J	1 U	1 U	1 U	1 U
Vanadium	5 U	8.8 B	6.3 B	5 U	52.9 B	5 U	5 U	12.6 B	25.4 B
Zinc	95.6	1310	2 U	18.8	1400	187	6.7	11.1	278
Cyanide, Total	0.01 U	6.6 J	2.6 J	5.6 J	0.01 U	0.01 U	4.9 J	0.01 U	100

Data Qualifiers

B - compound detected in a blank

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 5-3D

SUMMARY OF UST AND BUILDING 15/15A SAMPLE DETECTIONS - SULFIDE AND PETROLEUM HYDROCARBONS

SAMPLE ID:	BLDG 15 LNAPL.032318	BUILDING 15-PH-1.032318	UST-LOT 64-2.032118	UST-LOT 64-3.032118	UST-LOT 64-4.032218	UST-LOT 64-5.032218	UST-LOT 64-5.LNAPL.032218
COLLECTION DATE:	3/23/2018	3/23/2018	3/21/2018	3/21/2018	3/22/2018	3/22/2018	3/22/2018
Lab Analyte	Result	Result	Result	Result	Result	Result	Result
Sulfide (ug/L)							
Sulfide	--	1400	1700	1700	1400	610 J	--
Petroleum Hydrocarbons (mg/kg)							
C10-C11	3100	--	--	--	--	--	43000
C10-C28	110000	--	--	--	--	--	710000
C11-C12	4800	--	--	--	--	--	34000
C12-C13	7200	--	--	--	--	--	38000
C13	250 U	--	--	--	--	--	3700
C13-C14	9300	--	--	--	--	--	44000
C14-C15	9000	--	--	--	--	--	54000
C15	250 U	--	--	--	--	--	8200
C15-C16	7800	--	--	--	--	--	56000
C16-C17	5600	--	--	--	--	--	38000
C17-C18	6300	--	--	--	--	--	52000
C18-C19	8100	--	--	--	--	--	67000
C19-C20	6600	--	--	--	--	--	42000
C20-C21	5100	--	--	--	--	--	42000
C21-C22	5300	--	--	--	--	--	38000
C22-C23	6000	--	--	--	--	--	33000
C23-C24	4600	--	--	--	--	--	29000
C24-C25	4800	--	--	--	--	--	25000
C25-C26	4600	--	--	--	--	--	22000
C26-C27	3900	--	--	--	--	--	21000
C27-C28	4300	--	--	--	--	--	19000
C28-C29	3500	--	--	--	--	--	14000
C29-C30	4400	--	--	--	--	--	15000
C30-C31	4100	--	--	--	--	--	12000
C31-C32	3200	--	--	--	--	--	11000
C32-C33	3300	--	--	--	--	--	8500
C33-C34	3500	--	--	--	--	--	8600
C34-C35	3600	--	--	--	--	--	9200
C35-C36	2700	--	--	--	--	--	4700
C36-C37	4000	--	--	--	--	--	6100
C37-C38	3500	--	--	--	--	--	6400
C38-C39	3400	--	--	--	--	--	5400
C39-C40	4000	--	--	--	--	--	7600
C8-C40	150000	--	--	--	--	--	860000
C8-C9	740	--	--	--	--	--	13000
C9-C10	2400	--	--	--	--	--	40000
Dodecane	250 U	--	--	--	--	--	3900
Heptadecane	250 U	--	--	--	--	--	5900
Hexadecane	250 U	--	--	--	--	--	4400
n-Decane	250 U	--	--	--	--	--	7700
n-Octadecane	250 U	--	--	--	--	--	6100
n-Tetradecane	250 U	--	--	--	--	--	5100
Pristane(C19 branched)	370	--	--	--	--	--	2500 U
Total Extractable Hydrocarbons	150000	--	--	--	--	--	860000
Undecane	250 U	--	--	--	--	--	4800

Data Qualifiers

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

TABLE 5-3E

SUMMARY OF UST AND BUILDING 15/15A SAMPLE DETECTIONS - DISPOSAL CHARACTERIZATION

SAMPLE ID:	UST-LOT 64-1.032018	UST-LOT 64-2.032118	UST-LOT 64-3.032118	UST-LOT 64-4.032218	UST-LOT 64-5.032218	UST-LOT 64-6.032218	UST-LOT 64-7.032318	BUILDING 15-PH-1_032318
COLLECTION DATE:	03/20/2018	03/21/2018	03/21/2018	03/22/2018	03/22/2018	03/22/2018	03/23/2018	03/23/2018
Lab Analyte	Result	Result	Result	Result	Result	Result	Result	Result
General Chemistry (deg f)								
Ignitability	>160	>160	>160	>160	>160	>160	>160	>160
pH (su)								
pH	7.7	7.7	8.1	7.6	7.3	7.4	7.0	8.1
Corrosivity (su)								
Corrosivity	7.7	7.7	8.1	7.6	7.3	7.4	7.0	8.1
Metals - TCLP (mg/l)								
Barium	0.3 J	0.48 J	0.23 J	0.26 J	0.16 J	0.2 J	0.24 J	0.35 J
Cadmium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0027 J
Chromium	0.05 U	0.018 J	0.05 U	0.049 J	0.02 J	0.05 U	0.019 J	0.015 J
Lead	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.087 J
VOCs - TCLP (mg/l)								
Benzene	0.01 U	0.039	0.038	0.087	0.01 U	0.01 U	0.036	0.01 U
2-Butanone	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1.3	0.05 U
Vinyl chloride	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.24	0.01 U
SVOCs - TCLP (mg/l)								
2-Methylphenol	0.01 U	0.087 J	0.036 J	0.11	0.1 U	0.01 U	0.022 J	0.05 U
3 & 4 Methylphenol	0.01 U	0.1 U	0.1 U	0.51	0.1 U	0.01 U	0.15	0.05 U

Notes:

U - Not detected above the laboratory reporting limit

J - Estimated Value, result >MDL and <RL

TABLE 5-4
SUMMARY OF CONTAINER SAMPLE DETECTIONS

SAMPLE ID:	CW-12-1_032018	CW-17-1_032318	CW-7-1_032318
COLLECTION DATE:	03/20/2018	03/23/2018	03/23/2018
Lab Analyte	Result	Result	Result
Total Metals (mg/kg)			
Aluminum	--	--	32.1 J+
Barium	--	--	4 J
Calcium	--	--	995
Chromium	--	--	0.42 J
Copper	--	--	0.76 J
Iron	--	--	37.2 J
Lead	--	--	0.41 J
Manganese	--	--	0.75 J
Nickel	--	--	4.1 J
Potassium	--	--	128 J
Sodium	--	--	576 J
Zinc	--	--	3.5
TCLP Metals (mg/l)			
Barium	2 U	0.028 J	--
Chromium	0.021 J	0.052	--
VOCs (mg/kg)	--	--	none detected
TCLP VOCs (mg/l)	none detected	none detected	--
SVOCs (mg/kg)	--	--	none detected
TCLP SVOCs (mg/l)	none detected	none detected	--
Cyanide			
Cyanide, Total (mg/kg)	--	--	2.7 U
Cyanide, Total (mg/l)	0.0027 J	0.0025 J	--
PCBs (mg/kg)	--	--	none detected
PCBs (mg/l)	none detected	none detected	--
Miscellaneous Analytes			
Ignitability (deg F)	>160	>160	--
Sulfide (mg/l)	1 U	1 U	--
pH (su)	8 J	7.5 J	9 J
Corrosivity (su)	8 J	7.5 J	9 J
Flashpoint Burn Rate (mm/sec)	--	--	2.2 U
Percent Moisture	--	--	19.9
Percent Solids	--	--	80.1

Notes:
J - Estimated Value, result >MDL and <RL
J+ - The result is an estimated quantity, and the result may be biased high.
U - Not detected above the laboratory reporting limit

TABLE 6-1

PHASE 1 SUMP AND SEWER SAMPLE LIST
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Location	Phase 1 Sampling Location/Designation [a]	Number of Phase 1 Samples/Frequency [b]
Sewer Samples		
Lot 1	SEWER-LOT 1-10_032018	1
Lot 1	DUP-1_032018	1
Lot 1	SEWER-LOT 1-17_032018	1
Lot 1	SEWER-LOT 1-20_032018	1
Lot 1	SEWER-LOT 1-8_031918	1

NOTES:

a) Laboratory submitted sump and sewer sample ID.

b) Number of samples collected from sumps and sewers.

TABLE 4

SUMMARY OF SEWER SAMPLE DETECTIONS

SAMPLE ID:		SEWER-LOT 1-10.032018	DUP-1.032018	SEWER-LOT 1-17.032018	SEWER-LOT 1-20.032018	SEWER-LOT 1-8.031918
COLLECTION DATE:		3/20/2018	3/20/2018	3/20/2018	3/20/2018	3/19/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result
VOCs (ug/l)						
Acetone	NE	67 U	67 U	92	67 U	250 U
Bromodichloromethane	80	5 U	5 U	5.5	5 U	130 U
Chloroform	80	5 U	5 U	29	5 U	130 U
Dibromochloromethane	80	5 U	5 U	1.2 J	5 U	130 U
Methylene Chloride	5	10 U	10 U	5 U	5 U	***32000 D***
Toluene	1000	0.46 J	5 U	1.6 J	5 U	56 J
Trichloroethene	5	5 U	5 U	5 U	5 U	***51 J***
SVOCs (ug/l)						
Benzo(a)pyrene	0.2	4.9 U	4.8 U	4.9 U	4.8 U	***0.69 J***
Bis(2-ethylhexyl)phthalate	6	4.9 U	4.8 U	2.2 J	4.8 U	2.3 J
Chrysene	NE	4.9 U	4.8 U	4.9 U	4.8 U	0.61 J
2-Methylphenol	NE	9.7 U	9.7 U	9.8 U	9.6 U	1.5 J
4-Methylphenol	NE	9.7 U	9.7 U	54 D	9.6 U	6.2 J
1,4-Dioxane	NE	1.9 U	1.9 U	4.1 J	1.9 U	2 U
Phenol	NE	1.6 J	1.3 J	15 J	9.6 U	9.9 U
Pyrene	NE	4.9 U	4.8 U	4.9 U	4.8 U	0.74 J
PCBs (ug/l)						
None Detected						
Metals (ug/l)						
Aluminum	NE	26.4	23.3	182	350	166
Antimony	6	0.75 J	0.77 J	2 U	0.73 J	0.22 J
Arsenic	10	0.79 J	0.66 J	0.8 J	6.1	0.81 J
Barium	2000	59.1	59.6	14.7	102	137
Cadmium	5	1 U	1 U	1 U	0.79 J	0.29 J
Calcium	NE	37700	37800	22000	66700	33900
Chromium	100	1 J	0.87 J	3.8	1.2 J	1.5 J
Cobalt	NE	0.25 J	0.22 J	0.22 J	0.55 J	2.3
Copper	1300	6.4	6.3	23.5	9.3	5.9
Iron	NE	390	398	731	795	13600
Lead	15	0.99 J	0.99 J	3.2	10.5	10.4
Magnesium	NE	4770	4730	5660	2060	2680
Manganese	NE	37.6 B	37.5 B	22.6 B	53.1 B	197 B
Nickel	NE	2.8	2.9	3.2	4.5	5.7
Potassium	NE	4570 B	4590 B	25200 B	8700 B	2680 B
Selenium	50	1.8 J	2.2 J	5 U	15.5	1.5 J
Silver	NE	1 U	1 U	0.96 J	1 U	1 U
Sodium	NE	32300	32500	72900	777000	8690
Zinc	NE	18.1	18	65.5	79.9	263

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 7-1

SITE MONITORING WELL DETAILS

RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE

NEWARK, NEW JERSEY

Lot Number / Block Number	Woodard & Curran Well Designation	Well Owner	Owner Well Designation	PERMIT INFORMATION							SURVEY DATA												FIELD MEASUREMENTS		
											Elevations (U.S. Survey Feet)			State Plane Coordinates (U.S. Survey Feet)		Geographic Coordinates (NAD 83)								
																Latitude (North)			Longitude (West)					
				Permit Number	Diameter (inch)	Finished Well Depth (ft BGS)	Installation Date	Material	Screened Interval (ft BGS)	Sand Pack (ft BGS)	Ground Surface	Measuring Point Casing (Marked)	Protective Vault/Outer	North	East	°	'	"	°	'	"	Water Level (ft TOR) 6/4/2018	Total Depth (TOR)	PID (ppm) 6/4/2018
Lot 68	E - 1	Eric Cellen / Celcor Associates	MW-1	2600087215	2"	14.5'	May 12, 2008	Sch 40 PVC / 10 slot screen	4.5' - 14.5'	2.5' - 14.5'	9.8522	9.6126	9.8522	703883.9	586264.58	40	45	54.85759	74	9	36.45035	6.55	14.16	1.3
Lot 66	E - 2	Eric Cellen / Celcor Associates	MW-2	2600087216	2"	12.5'	May 13, 2008	Sch 40 PVC / 10 slot screen	2.5' - 12.5'	2.0' - 12.5'	6.5302	6.2172	6.6292	703803.06	586423.65	40	45	54.35028	74	9	34.38596	3.33	11.97	0.2
Lot 64	E - 3	Eric Cellen / Celcor Associates	MW-3	2600087217	2"	12'	May 13, 2008	Sch 40 PVC / 10 slot screen	2' - 12'	2' - 12'	8.425	8.2	8.53	704151.06	586434.11	40	45	57.78876	74	9	34.23249	4.2	11.4	29
Lot 62	E - 4	Eric Cellen / Celcor Associates	MW-4	2600087218	2"	12.5'	May 13, 2008	Sch 40 PVC / 10 slot screen	2.5' - 12.5'	2' - 12.5'	7.3166	7.6376	7.8626	704228.93	586571.98	40	45	58.56286	74	9	32.43656	3.52	11.93	0.7
Lot 1	E - 5	Hatzlucha on Riverside	MW-1	E201310824	4"	12'	August 2, 2013	Sch 40 PVC / 10 slot screen	2' - 12'	1' - 12'	9.5471	9.2581	9.5621	704198.76	586363.86	40	45	58.26167	74	9	34.75322	5.14	11.9	2.7
Lot 1	E - 6	Hatzlucha on Riverside	MW-3	E201310826	4"	12'	August 2, 2013	Sch 40 PVC / 10 slot screen	2' - 12'	1' - 12'	9.6841	9.1941	9.7141	704254.7	586419.46	40	45	58.81348	74	9	34.41767	4.69	12	0
Lot 1	E - 7	Hatzlucha on Riverside	MW-4	E201310827	4"	17'	August 2, 2013	Sch 40 PVC / 10 slot screen	2' - 17'	1' - 17'	9.7401	9.2731	9.8101	704273.92	586421.52	40	45	59.00333	74	9	34.38998	4.75	17	0
Lot 60	E - 8	Color Enterprises - Roloc Film Processing	MW-1	E201207838	2"	15'	May 31, 2012	Sch 40 PVC / 10 slot screen	5' - 15'	3' - 15'	6.9792	5.7869	6.1822	704226.57	586642.26	40	45	58.52695	74	9	31.52332	3.26	14.8	--
Lot 65	MW-101	PPG Industries Inc.	--[2]	E201800598	2"	12 (12.20)[E1]	February 2, 2018	Sch 40 PVC / 10 slot screen	2.2' - 12.2'	1.5' - 12.2'	10.4312	10.1584	10.4832	703954.47	586249.03	40	45	55.85318	74	9	36.64789	7.18	12	1.6
Lot 66	MW-102	PPG Industries Inc.	--	E201800599	2"	11.66 (12.26)[E1]	February 2, 2018	Sch 40 PVC / 10 slot screen	2.2' - 12.2'	1.5' - 12.2'	11.5039	11.2419	11.6639	703876.09	586324.28	40	45	55.07576	74	9	35.67381	8.59	12.02	0.2
Lot 67	MW-103	PPG Industries Inc.	--	E201800601	2"	12.3	February 6, 2018	Sch 40 PVC / 10 slot screen	2.3' - 12.3'	1.5' - 14.0'	6.6413	6.2773	6.6743	703750.97	586367.01	40	45	53.83771	74	9	35.12476	3.68	11.8	0.7
Lot 66	MW-104	PPG Industries Inc.	--	E201800600	2"	12.1	February 5, 2018	Sch 40 PVC / 10 slot screen	2.10' - 12.10'	1.5' - 12.10'	7.0582	6.9272	7.1922	703955.51	586449.64	40	45	54.85759	74	9	34.04556	4.26	11.7	0
Lot 64	MW-105	PPG Industries Inc.	--	E201800595	2"	12	February 5, 2018	Sch 40 PVC / 10 slot screen	2.0' - 12.0'	1.4' - 12.0'	8.365	7.9429	8.41	704184.69	586343.21	40	45	58.12655	74	9	35.41222	2.52	11.45	47.3
Lot 64	MW-106	PPG Industries Inc.	--	E201800596	2"	11.1	February 5, 2018	Sch 40 PVC / 10 slot screen	2.0' - 11.10'	1.5' - 11.10'	9.403	9.193	9.494	704106.97	586398.88	40	45	57.35442	74	9	34.6926	3.63	10.55	--
Lot 63	MW-107	PPG Industries Inc.	--	E201800591	2"	12.25	February 2, 2018	Sch 40 PVC / 10 slot screen	2.25' - 12.25'	1.5' - 12.25'	9.4219	9.0019	9.4789	703960.83	586418.21	40	45	55.80955	74	9	34.44873	5.22	11.63	88.9
Lot 63	MW-108	PPG Industries Inc.	--	E201800592	2"	12.2	February 6, 2018	Sch 40 PVC / 10 slot screen	2.20' - 12.20'	1.5' - 13.0'	8.633	8.321	8.683	704069.94	586468.87	40	45	56.98581	74	9	33.7848	4.55	11.8	276.5
Lot 64	MW-109	PPG Industries Inc.	--	E201800580	2"	11.98	February 6, 2018	Sch 40 PVC / 10 slot screen	1.98' - 11.98'	1.45' - 13.0'	8.278	8.0695	8.296	704105.17	586523.51	40	45	57.33186	74	9	33.67286	4.32	11.79	88.5
Lot 63	MW-110	PPG Industries Inc.	--	E201800593	2"	12.3	February 5, 2018	Sch 40 PVC / 10 slot screen	2.30' - 12.30'	1.5' - 12.30'	7.3922	7.001	7.6692	703930.98	586493.74	40	45	55.61168	74	9	33.46858	4.22	11.75	4.5
Lot 63	MW-111	PPG Industries Inc.	--	E201800594	2"	12.25	February 7, 2018	Sch 40 PVC / 10 slot screen	2.25' - 12.25'	1.5' - 12.25'	6.527	6.4252	6.72	703998.63	586526.98	40	45	56.27891	74	9	33.03314	2.9	12.25	377.6
Lot 64	MW-112	PPG Industries Inc.	--	E201800581	2"	12.3	February 6, 2018	Sch 40 PVC / 10 slot screen	2.30' - 12.30'	1.5' - 12.30'	7.763	7.526	7.835	704079.82	586587.42	40	45	57.0789	74	9	32.2435	4.59	11.86	130.5
Lot 58	MW-114	PPG Industries Inc.	--	E201800572	2"	15.25 (stick-up 12.25' BGS)[E1]	February 3, 2018	Sch 40 PVC / 10 slot screen	2.25' - 12.25'	1.5' - 12.25'	9.3123	12.1403	12.5083	704541.56	586568.41	40	46	1.64247	74	9	32.46725	9.51	14.85	365.1
Lot 58	MW-115	PPG Industries Inc.	--	E201800573	2"	12.15	February 3, 2018	Sch 40 PVC / 10 slot screen	2.15' - 12.15'	1.5' - 12.15'	9.238	8.962	9.274	704806.48	586669.32	40	46	2.28016	74	9	31.16541	7.52	11.7	48.2
Lot 57	MW-116	PPG Industries Inc.	--	E201800570	2"	12.18	February 3, 2018	Sch 40 PVC / 10 slot screen	2.18' - 12.18'	1.5' - 12.18'	8.8743	8.6467	8.9173	704521.67	586710.36	40	46	1.44046	74	9	30.62329	5.65	11.9	0
Lot 59	MW-117	PPG Industries Inc.	--	E201800579	2"	12.35	February 4, 2018	Sch 40 PVC / 10 slot screen	2.35' - 12.35'	1.5' - 12.35'	6.2781	6.0528	6.3551	704360.82	586713.59	40	45	59.75203	74	9	30.58996	3.68	11.95	0.7
Lot 57	MW-118	PPG Industries Inc.	--	E201800571	2"	12.07	February 4, 2018	Sch 40 PVC / 10 slot screen	2.07' - 12.07'	1.5' - 12.07'	5.9201	5.5481	5.9451	704459.38	586786.89	40	46	0.82198	74	9	29.63176	5	12.07	12.2
Lot 70	MW-119	PPG Industries Inc.	--	E201800607	2"	12.5	February 1, 2018	Sch 40 PVC / 10 slot screen	2.5' - 12.5'	1.5' - 12.5'	7.3356	7.1538	7.3996	704582.53	586848.69	40	46	2.03855	74	9	28.82226	4.51	12.2	0.3
Lot 69	MW-120	PPG Industries Inc.	--	E201800603	2"	12.27	February 6, 2018	Sch 40 PVC / 10 slot screen	2.27' - 12.27'	1.5' - 12.27'	8.8042	8.6142	8.9302	704731.1	586854.5	40	46	3.50447	74	9	28.73924	6.01	11.9	0.5
Lot 69	MW-121	PPG Industries Inc.	--	E201800604	2"	9.78 (10.03)[E1]	February 3, 2018	Sch 40 PVC / 10 slot screen	2.03' - 10.03'	1.47' - 10.03'	7.1932	6.8412	7.2262	704664.17	586889.18	40	46	2.84174	74	9	28.29186	4.07	9.76	0.3
Lot 69	MW-122	PPG Industries Inc.	--	E201800605	2"	12.00 (12.25)[E1]	February 3, 2018	Sch 40 PVC / 10 slot screen	2.25' - 12.25'	1.5' - 12.25'	8.1942	8.1402	8.4222	704766.73	586788.89	40	46	3.55909	74	9	29.5902	6.02	12	37.7
Lot 68	MW-123	PPG Industries Inc.	--	E201800597	2"	11.71 (11.96)[E1]	February 2, 2018	Sch 40 PVC / 10 slot screen	1.96' - 11.96'	1.5' - 11.96'	9.3672	9.1462	9.4212	703815.3	586242.99	40	45	54.47816	74	9	36.7334	6.49	11.62	2.5

TABLE 7-2

SUMMARY OF PHASE 1 GROUNDWATER ELEVATIONS

RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE

NEWARK, NEW JERSEY

Lot Number / Block Number	Well / River Gauge ID	Screened Interval (ft)	Surveyed Elevations (MSL) [a]		Depth to Groundwater near Tidal Peak (ft TOR)					Depth to Groundwater near Tidal Peak (ft TOR)				
					High Tide (3/12/2018, 1622-1815)		Low Tide (3/13/2018, 1300-1500)		Groundwater Depth Difference btw High and Low Tides (ft)	High Tide (6/6/20188, 1305-1537)		Low Tide (6/7/18, 0849-1043)		Groundwater Depth Difference btw High and Low Tides (ft)
			TOR [b] Elevation	Ground Surface	Depth to Groundwater (ft TOR)	Groundwater Elevation MSL	Depth to Groundwater (ft TOR)	Groundwater Elevation MSL		Depth to Groundwater (ft TOR)	Groundwater Elevation MSL	Depth to Groundwater (ft TOR)	Groundwater Elevation MSL	
Lot 68	E - 1	4.5' - 14.5'	9.6126	9.8522	6.13	3.4826	6.17	3.4426	-0.04	7.06	2.5526	7.13	2.4826	-0.07
Lot 66	E - 2	2.5' - 12.5'	6.2172	6.5302	2.84	3.3772	2.83	3.3872	0.01	3.55	2.6672	3.63	2.5872	-0.08
Lot 64	E - 3	2' - 12'	8.2	8.425	4.31	3.89	4.42	3.78	-0.11	4.25	3.95	4.34	3.86	-0.09
Lot 62	E - 4	2.5' - 12.5'	7.6376	7.8106	3.92	3.7176	3.81	3.8276	0.11	3.81	3.8276	4.00	3.6376	-0.19
Lot 1	E - 5	2' - 12'	9.2581	9.5471	5.32	3.9381	6.73	2.5281	-1.41	5.27	3.9881	5.34	3.9181	-0.07
Lot 1	E - 6	2' - 12'	9.1941	9.6841	5.33	3.8641	7.07	2.1241	-1.74	5.06	4.1341	5.12	4.0741	-0.06
Lot 1	E - 7	2' - 17'	9.2731	9.7401	5.38	3.8931	7.11	2.1631	-1.73	5.02	4.2531	5.20	4.0731	-0.18
Lot 60	E - 8	5' - 15'	5.7869	6.0792	3.5	2.2869	4.29	1.4969	-0.79	3.32	2.4669	5.24	0.5469	-1.92
Lot 65	MW-101	2.2' - 12.2'	10.1584	10.4312	6.21	3.9484	6.21	3.9484	0	7.20	2.9584	7.27	2.8884	-0.07
Lot 66	MW-102	2.2' - 12.2'	11.2419	11.5039	7.51	3.7319	7.56	3.6819	-0.05	8.43	2.8119	8.61	2.6319	-0.18
Lot 67	MW-103	2.3' - 12.3'	6.2773	6.6413	4.21	2.0573	3.98	2.2973	0.23	4.10	2.1773	4.20	2.0773	-0.1
Lot 66	MW-104	2.10' - 12.10'	6.9272	7.0582	3.96	2.9672	4.05	2.8772	-0.09	4.55	2.3772	4.76	2.1672	-0.21
Lot 64	MW-105	2.0' - 12.0'	7.9429	8.365	2.66	5.2829	2.64	5.3029	0.02	3.05	4.8929	3.01	4.9329	0.04
Lot 64	MW-106	2.0' - 11.10'	9.193	9.403	3.19	6.003	3.12	6.073	0.07	3.91	5.283	3.92	5.273	-0.01
Lot 63	MW-107	2.25' - 12.25'	9.0019	9.4219	4.92	4.0819	4.88	4.1219	0.04	5.40	3.6019	5.52	3.4819	-0.12
Lot 63	MW-108 [c]	2.20' - 12.20'	8.321	8.633	4.46	3.861	NA [e]	--	--	4.61	3.711	4.69	3.631	-0.08
Lot 64	MW-109	1.98' - 11.98'	8.0695	8.278	4.24	3.8295	4.26	3.8095	-0.02	4.35	3.7195	4.44	3.6295	-0.09
Lot 63	MW-110	2.30' - 12.30'	7.001	7.3922	4.65	2.351	5.06	1.941	-0.41	4.56	2.441	5.05	1.951	-0.49
Lot 63	MW-111	2.25' - 12.25'	6.4252	6.527	2.84	3.5852	2.88	3.5452	-0.04	2.96	3.4652	3.06	3.3652	-0.1
Lot 64	MW-112	2.30' - 12.30'	7.526	7.763	4.50	3.026	4.86	2.666	-0.36	4.33	3.196	4.90	2.626	-0.57
Lot 58	MW-114	2.25' - 12.25'	12.1403	9.3123	11.34	0.8003	10.34	1.8003	1	10.05	2.0903	10.11	2.0303	-0.06
Lot 58	MW-115	2.15' - 12.15'	8.962	9.238	7.45	1.512	7.38	1.582	0.07	7.22	1.742	8.52	0.442	-1.3
Lot 57	MW-116	2.18' - 12.18'	8.6467	8.8743	5.51	3.1367	5.60	3.0467	-0.09	5.96	2.6867	5.99	2.6567	-0.03
Lot 60	MW-117	2.35' - 12.35'	6.0528	6.2781	4.55	1.5028	4.20	1.8528	0.35	4.14	1.9128	4.47	1.5828	-0.33
Lot 57	MW-118	2.07' - 12.07'	5.5481	5.9201	3.01	2.5381	5.77	-0.2219	-2.76	2.78	2.7681	5.78	-0.2319	-3
Lot 70	MW-119	2.5' - 12.5'	7.1538	7.3356	3.94	3.2138	4.00	3.1538	-0.06	4.33	2.8238	4.45	2.7038	-0.12
Lot 69	MW-120	2.27' - 12.27'	8.6142	8.8942	5.64	2.9742	5.66	2.9542	-0.02	6.10	2.5142	6.17	2.4442	-0.07
Lot 69	MW-121	2.03' - 10.03'	6.8412	7.1932	3.70	3.1412	3.76	3.0812	-0.06	4.12	2.7212	4.24	2.6012	-0.12
Lot 69	MW-122	2.25' - 12.25'	8.1402	8.1942	5.73	2.4102	5.89	2.2502	-0.16	6.21	1.9302	6.50	1.6402	-0.29
Lot 68	MW-123	1.96' - 11.96'	9.1462	9.3672	5.63	3.5162	5.76	3.3862	-0.13	6.61	2.5362	6.69	2.4562	-0.08
River Gauge, Lot 66	RG-1	-- [d]	6.6102	--	4.15	2.4502	7.13	-0.5198	-2.98	2.90	3.7102	7.14	-0.5298	-4.24
River Gauge, Lot 61	RG-2	--	7.4946	--	5.04	2.4546	7.4	0.0946	-2.36	4.63	2.8646	7.44	0.0546	-2.81
River Gauge, Lot 57	RG-3	--	6.4561	--	3.97	2.4861	6.52	-0.0639	-2.55	3.50	2.8561	6.68	-0.2239	-3.08

Notes:

a) MSL - feet above mean sea level.

b) "TOR" top of riser casing, total depth elevation was taken from the top of the casing, value in "(xx)" is the corrected value for BGS.

c) MW-108 water level was not gauged due to rainwater covering flush mount.

d) "--" no information.

e) NA = Well was not accessible due to the pooling of building #7's roof meltwater run off and snow melt run off from plowed snow piles adjacent to wells location. .

TABLE 7-3

SUMMARY OF GROUNDWATER FIELD PARAMETERS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

	Location:	E-1		E-2		E-3		E-4		E-5	
	Date Sampled:	3/12/2018	6/5/2018	3/14/2018	6/12/2018	3/13/2018	6/5/2018	3/14/2018	6/11/2018	3/13/2018	6/5/2018
	Additional Information:				DUP-2[h]						
pH	-- [a]	6.50	6.47	7.66	7.42	6.58	6.67	6.58	6.64	6.73	6.57
Temperature	°C [b]	13.4	15.8	9.1	18.5	11.8	13.7	10.5	13.6	8.4	16.5
Conductivity	µS/cm [c]	1069	1148	753	836	875	1108	917	760	976	977
Dissolved Oxygen	mg/L [d]	0.07	0.07	0.07	0	0.54	0	0.05	0	0.14	0
Turbidity	NTU [e]	16.7	15.8	1.26	4.69	5.43	4.35	8.66	6.17	13.1	4.84
ORP	mV [f]	-10.8	-106.7	107.5	-172	21.4	-83.8	-8.0	-18.0	-40.5	-77

	Location:	MW-103		MW-104		MW-105		MW-106		MW-107	
	Date Sampled:	3/6/2018	6/12/2018	3/14/2018	6/7/2018	3/13/2018	6/5/2018	3/13/2018	6/4/2018	3/6/2018	6/7/2018
	Additional Information:										
pH	-- [a]	5.56	6.55	6.13	6.73	6.76	6.96	7.13	6.99	6.87	6.75
Temperature	°C [b]	8.9	16.5	7.8	14.5	8.3	15.4	6.2	15	9.2	14.1
Conductivity	µS/cm [c]	2043	1106	1048	841	1067	1139	2567	3002	839	876
Dissolved Oxygen	mg/L [d]	1.99	0.03	0.16	0	0.28	0	0.00	1.65	5.1	0.02
Turbidity	NTU [e]	16.4	1.38	7.08	7.35	245	6.88	7.12	10.7	10.2	14
ORP	mV [f]	137.9	16.3	52.3	-138.7	-27.9	-98.3	-103.1	-140.8	-48.9	-125.8

	Location:	MW-114		MW-115		MW-116		MW-117		MW-118	
	Date Sampled:	3/8/2018	6/6/2018	3/9/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/11/2018
	Additional Information:		MS/MSD[g]								
pH	-- [a]	6.76	6.41	5.88	5.6	6.26	6.52	7.28	6.97	4.45	4.53
Temperature	°C [b]	11.6	14.2	9.2	13.6	10.3	16.1	8.5	16.4	9.5	18
Conductivity	µS/cm [c]	1184	1319	281.2	1046	18476	18537	2090	3781	5022	4776
Dissolved Oxygen	mg/L [d]	0.32	1.43	1.42	0.2	0.23	0	4.41	0	0.32	0.67
Turbidity	NTU [e]	2.26	2.72	1.00	1.36	5.58	4.88	19.1	8.51	20.4	98.1
ORP	mV [f]	-60.2	-177.1	4.6	-43.6	-72.5	-98.3	47.0	-46.0	-50.8	32.6

TABLE 7-3

SUMMARY OF GROUNDWATER FIELD PARAMETERS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

	Location:	E-6		E-7		E-8		MW-101		MW-102	
	Date Sampled:	3/13/2018	6/12/2018	3/13/2018	6/7/2018	3/14/2018	6/4/2018	3/14/2018	6/5/2018	3/6/2018	6/12/2018
	Additional Information:	Dup-2	MS/MSD								
pH	-- [a]	7.07	6.11	7.11	6.86	6.81	6.75	6.44	6.42	6.60	6.58
Temperature	°C [b]	8.7	14.7	9.7	14.3	9.6	14.5	10.3	14.6	12.9	15.1
Conductivity	µS/cm [c]	517.6	1021	530.7	1207	981	869	1189	1124	1420	1522
Dissolved Oxygen	mg/L [d]	0.01	0	4.16	1.9	0.12	0.13	0.46	0.16	4.00	0.00
Turbidity	NTU [e]	3.55	39.7	21.7	5.27	0.31	1.42	11.8	2.52	1.15	7.3
ORP	mV [f]	196.4	59.4	200.2	148.7	-100.6	-125.3	153.9	46.7	-2.8	-97.7

	Location:	MW-108		MW-109		MW-110		MW-111		MW-112	
	Date Sampled:	3/6/2018	6/5/2018	3/9/2018	6/5/2018	3/14/2018	6/7/2018	3/14/2018	6/7/2018	3/9/2018	6/7/2018
	Additional Information:		DUP-1	DUP-1		MS / MSD				MS / MSD	
pH	-- [a]	6.56	6.22	6.85	6.63	6.87	6.95	6.8	6.69	6.37	6.34
Temperature	°C [b]	7.8	12	9.7	14.6	9.4	12.6	8.5	11.9	7.8	16.6
Conductivity	µS/cm [c]	766.5	881	786	1002	1368	1085	547.2	496.3	664	802
Dissolved Oxygen	mg/L [d]	0.65	0.18	0.11	0.8	0.07	0	0.00	0.03	0.66	0.13
Turbidity	NTU [e]	7.06	15.7	6.0	94.5	3.16	9.3	2.66	24.8	4.47	24.8
ORP	mV [f]	-49.5	-66.1	-15.4	-104.6	-87.7	-139.9	-1.1	-91.2	44.3	-48.7

	Location:	MW-119		MW-120		MW-121		MW-122		MW-123	
	Date Sampled:	3/6/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/12/2018	6/5/2018
	Additional Information:										
pH	-- [a]	6.98	7.08	6.85	6.69	7.1	6.95	6.71	5.98	6.51	6.57
Temperature	°C [b]	8.1	13.3	10.1	14.5	8.5	13.8	8.9	17.6	13.7	16.5
Conductivity	µS/cm [c]	1910	3320	1737	1750	2137	2547	680.1	635	1337	1489
Dissolved Oxygen	mg/L [d]	3.22	0.01	0.92	0	0.50	0.68	0.18	0.21	0.05	0.02
Turbidity	NTU [e]	5.18	15.6	5.22	28.5	2.89	2.05	0.88	0.83	16.8	5.28
ORP	mV [f]	85.9	-122.6	-28.9	-72.8	-103.4	-138.5	-93.5	-28.3	46.5	-125.3

Notes:
a) "--" pH is standard units.
b) "°C" is degrees celsius.
c) "µS/cm" is microSiemens per centimeter.
d) "mg/L" is milligrams per liter.
e) "NTU" is Nephelometric Turbidity Units.
f) "mV" is millivolts.
g) "MS/MSD" matrix spike/matrix spike duplicate.
h) "Dup" Duplicate - xx.

TABLE 7-4
PHASE 1 GROUNDWATER AND SUMP SAMPLE LIST
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Well ID	Phase 1 Sampling Location/Designation [a]	Number of Phase 1 Samples/Frequency [b]
Monitoring Well Groundwater Samples		
E-1	E-1_031218	1
E-1	E-1_060518	1
E-2	E-2_031418	1
E-2	E-2_061218	1
E-2	DUP-2_061218 (c)	1
E-3	E-3_031318	1
E-3	E-3_060518	1
E-4	E-4_031418	1
E-4	E-4_061118	1
E-5	E-5_031318	1
E-5	E-5_060518	1
E-6	E-6_031318	1
E-6	DUP-2_031318	1
E-6	E-6_061218	1
E-7	E-7_031318	1
E-7	E-7_060718	1
E-8	E-8_031418	1
E-8	E-8_060418	1
MW-101	MW-101_031418	1
MW-101	MW-101_060518	1
MW-102	MW-102_030618	1
MW-102	MW-102_061218	1
MW-103	MW-103_030618	1
MW-103	MW-103_061218	1
MW-104	MW-104_031418	1
MW-104	MW-104_060718	1
MW-105	MW-105_031318	1
MW-105	MW-105_060518	1
MW-106	MW-106_031318	1
MW-106	MW-106_060418	1
MW-107	MW-107_030618	1
MW-107	MW-107_060718	1
MW-108	MW-108_030618	1
MW-108	MW-108_060518	1
MW-108	DUP-1_060518	1
MW-109	MW-109_030918	1
MW-109	DUP-1_030918	1
MW-109	MW-109_060518	1
MW-110	MW-110_031418	1
MW-110	MW-110_060718	1
MW-111	MW-111_031418	1
MW-111	MW-111_060718	1
MW-112	MW-112_030918	1
MW-112	MW-112_060718	1
MW-114	MW-114_030818	1
MW-114	MW-114_060618	1
MW-115	MW-115_030918	1
MW-115	MW-115_060618	1
MW-116	MW-116_030818	1
MW-116	MW-116_060618	1
MW-117	MW-117_030818	1
MW-117	MW-117_060618	1
MW-118	MW-118_030818	1
MW-118	MW-118_061118	1
MW-119	MW-119_030618	1
MW-119	MW-119_060618	1
MW-120	MW-120_030818	1
MW-120	MW-120_060618	1
MW-121	MW-121_030818	1
MW-121	MW-121_060618	1
MW-122	MW-122_030818	1
MW-122	MW-122_060618	1
MW-123	MW-123_031218	1
MW-123	MW-123_060518	1
Sump Samples		
Building 2	LOT 1 BLDG 2 SUMP_031418	1
Building 4	LOT 1 BLDG 3 SUMP_031418	1
Building 17	LOT66 BLDG17 - SUMP1_060718	1
Building 17	LOT66 BLDG17 - SUMP2_060718	1

NOTES:

a) Laboratory submitted groundwater sample ID.

b) Number of samples collected from monitoring well.

c) "DUPs" are listed below the sample they correspond with.

TABLE 3A

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - VOCs

SAMPLE ID:		E-1.031218	E-1.060518	E-2.031418	E-2.061218	DUP-2.061218	E-3.031318	E-3.060518	E-4.031418	E-4.061118	E-5.031318	E-5.060518	E-6.031318	DUP-2.031318	E-6.061218	E-7.031318
COLLECTION DATE:		3/12/2018	6/5/2018	3/14/2018	6/12/2018	6/12/2018	3/13/2018	6/5/2018	3/14/2018	6/11/2018	3/13/2018	6/5/2018	3/13/2018	3/13/2018	6/12/2018	3/13/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)																
Cyclohexane	13000	3 U	3 U	3 U	3 U	3 U	2 J	2 J	0.77 J	3 U	0.74 J	3 U	3 U	3 U	3 U	3 U
Methyl acetate	7000	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Methylcyclohexane	NE	3 U	3 U	3 U	3 U	3 U	8.7	5.8	1.9 J	2.7 J	1.3 J	3 U	3 U	3 U	3 U	3 U
Acetone	6000	21	48	6 U	34	34	240	4.1 J	4.1 J	30 J	56	8.9	31	37	55	6 U
Benzene	0.46	0.2 U	0.2 U	0.078 J	0.14 J	0.14 J	0.42	0.25	0.043 J	0.049 J	0.036 J	0.047 J	0.2 U	0.2 U	0.2 U	0.2 U
Carbon disulfide	700	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	0.46	0.2 U	0.037 J	0.2 U	0.2 U	0.2 U	0.2 U	0.037 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	50	0.3	0.19 J	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.05 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	0.22	0.2 U	0.2 U	0.088 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 J	1.2
Isopropylbenzene	450	1.6	1 U	0.22 J	1 U	1 U	14	27	0.93 J	0.36 J	3	3.3	1 U	0.19 J	1 U	1 U
1,2-Dibromo-3-Chloropropane	0.00033	2 U	2 U	2 U	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U
Chlorodibromomethane	0.87	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	300	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,3-Dichlorobenzene	600	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.48	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	2.8	0.054 J	0.078 J	0.025 J	0.06 J	0.053 J	0.2 U	0.2 U	0.18 J	0.11 J	0.2 U	0.2 U	0.2 U	0.2 U	0.03 J	0.2 U
1,1-Dichloroethene	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	36	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	100	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.85	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	21000	0.23 J	0.23 J	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Ethylbenzene	1.5	0.2 U	0.2 U	0.11 J	0.2 U	0.2 U	0.079 J	0.077 J	0.15 J	0.2 U	0.2 U	0.2 U	0.2 U	0.14 J	0.2 U	0.2 U
2-Hexanone	38	1.4 J	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 UJ	3 U	3 U	3 U	3 U	3 U	3 U
2-Butanone	300	5 J	4.6 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	6300	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	14	0.69	0.37	0.3 U	0.3 U	0.3 U	0.14 J	0.17 J	0.19 J	0.3 U	0.24 J	0.16 J	0.17 J	0.18 J	0.11 J	0.092 J
Methylene Chloride	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.076	0.39	0.56	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.085 J	0.089 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.098 J	0.13 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	1.2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.28	0.26	0.2 U	0.2 U	0.2 U	0.2 U	4	3.4	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	0.49	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.11 J	0.2 U
Vinyl chloride	0.019	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 U
m,p-Xylene	190	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.34 J	0.26 J	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	190	0.5 U	0.2 J	0.17 J	0.5 U	0.5 U	0.48 J	0.65	0.4 J	0.5 U	0.5 U	0.15 J	0.5 U	0.16 J	0.5 U	0.5 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE 3A

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - VOCs

SAMPLE ID:		E-7.060718	E-8.031418	E-8.060418	MW-101.031418	MW-101.060518	MW-102.030618	MW-102.061218	MW-103.030618	MW-103.061218	MW-104.031418	MW-104.060718	MW-105.031318	MW-105.060518
COLLECTION DATE:		6/7/2018	3/14/2018	6/4/2018	3/14/2018	6/5/2018	3/6/2018	6/12/2018	3/6/2018	6/12/2018	3/14/2018	6/7/2018	3/13/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)														
Cyclohexane	13000	3 U	1.9 J	1.7 J	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Methyl acetate	7000	15 U	15 U	15 U	15 U	15 U	15 U	15 UJ	15 U	15 U	15 U	15 U	15 U	15 U
Methylcyclohexane	NE	3 U	8.2	10	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3.1	1.4 J
Acetone	6000	80 B	11	6 U	6 U	7.3	36	63	6 U	24	14	220 B	29	140
Benzene	0.46	0.2 U	0.2 U	0.046 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.03 J	0.2	0.21	***0.54***	***0.75***
Carbon disulfide	700	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	0.46	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	50	0.2 U	0.054 J	0.2 U	0.2 U	0.1 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	0.22	***1.2***	0.2 U	0.2 U	0.034 J	0.2 U	0.2 U	0.2 U	0.044 J	0.2 U	0.048 J	0.2 U	0.2 U	0.2 U
Isopropylbenzene	450	1 U	0.2 J	1 U	0.26 J	1 U	1 U	1 U	1 U	1 U	1.2	1.6	1.6	1.3
1,2-Dibromo-3-Chloropropane	0.00033	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ	2 U	2 U	2 U	2 U
Chlorodibromomethane	0.87	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.067 J	0.2 U	0.067 J	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	300	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,3-Dichlorobenzene	600	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.48	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	2.8	0.2 U	0.093 J	0.13 J	0.039 J	0.11 J	0.054 J	0.088 J	0.54	0.56	0.039 J	0.064 J	0.2 U	0.2 U
1,1-Dichloroethene	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	36	0.2 U	0.2 U	0.066 J	0.2 U	0.071 J	0.2 U	0.2 U	0.1 J	0.16 J	0.2 U	0.2 U	0.2 U	0.1 J
trans-1,2-Dichloroethene	100	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.85	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.094 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.094 J	0.2 U	0.2 U	0.2 U
Chloroethane	21000	0.5 U	0.5 U	0.26 J	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	1.5	0.2 U	0.12 J	0.18 J	0.12 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.5 B	***2.2 B***	0.1 J	0.09 J
2-Hexanone	38	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Butanone	300	10 U	10 U	10 U	10 U	7.5 J	10 U	4.6 J	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	6300	5 U	1.7 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	14	0.3 U	0.3	0.2 J	0.3 U	0.3 U	0.25 J	0.49	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Methylene Chloride	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.076	0.2 U	***0.43***	***0.52***	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	1	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.098 J	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	0.2 U	0.2 U	0.056 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.053 J	0.2 U	0.054 J	0.068 J
1,1,2-Trichloro-1,2,2-trifluoroethane	10000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	1.2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.2 U	0.2 U	0.2 U	0.2 U	0.029 J	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.28	0.2 U	***4.2***	***5.8***	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	0.49	0.1 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.13 J	0.2 U	0.2 U	0.079 J	0.1 J
Vinyl chloride	0.019	0.02 U	***0.057***	***0.078***	0.02 U	***0.071***	0.02 U	0.02 UJ	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 U
m,p-Xylene	190	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.46 J	0.38 J	0.5 U	0.14 J
o-Xylene	190	0.5 U	0.32 J	0.28 J	0.17 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.19 J	0.5 U	0.21 J	0.23 J

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - VOCs

SAMPLE ID:		MW-106.031318	MW-106.060418	MW-107.030618	MW-107.060718	MW-108.030618	MW-108.060518	DUP-1.060518	MW-109.030918	DUP-1.030918	MW-109.060518	MW-110.031418	MW-110.060718
COLLECTION DATE:		3/13/2018	6/4/2018	3/6/2018	6/7/2018	3/6/2018	6/5/2018	6/5/2018	3/9/2018	3/9/2018	6/5/2018	3/14/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
Cyclohexane	13000	3.3	2.2 J	2.7 J	1.8 J	17	7.4	7.8	14	14	15	2.8 JJ	2.2 J
Methyl acetate	7000	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Methylcyclohexane	NE	16	13	10	7.6	98 D	51	54	58	58	44	4.5	3.9
Acetone	6000	140	6 U	44	250 B	83	6	7.4	63	86	32	47	170 B
Benzene	0.46	***89 J***	***82 D***	***46***	***33***	***14***	***10***	***9.7***	***1.2***	***1.5***	***1.4***	***9.1 J***	***9.1***
Carbon disulfide	700	0.18 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.089 J	0.3 U	0.3 U
Carbon tetrachloride	0.46	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	50	0.2 U	23 J	0.2 U	0.2 U	2.7	1.3	1.3	0.2 U	0.43	0.2 U	0.49 J	0.76
Chloroform	0.22	0.064 J	0.2 U	0.2 U	0.2 U	0.2 U	0.063 J	0.069 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene	450	210 JD	48	18	17	120	80 D	80 D	9.9	9.2	7.3	7.8	11
1,2-Dibromo-3-Chloropropane	0.00033	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chlorodibromomethane	0.87	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	300	0.3 U	0.3 U	0.55	0.77	1.2	0.66	0.67	0.3 U	0.3 U	0.3 U	0.084 J	0.17 J
1,3-Dichlorobenzene	600	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 J
1,4-Dichlorobenzene	0.48	0.3 U	0.31	0.3 U	0.3 U	0.3 U	***0.5***	***0.5***	0.3 U	0.3 U	0.3 U	0.14 J	0.34
1,1-Dichloroethane	2.8	1.3	0.73	1.5	1.1	0.087 J	0.088 J	0.092 J	0.2 U	0.026 J	0.2 U	0.11 J	0.062 J
1,1-Dichloroethene	1	0.2 U	0.2 U	0.62	0.65	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	36	1.6	4.5	0.65	0.5	0.094 J	0.075 J	0.091 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	100	0.2 U	0.16 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.85	0.2 U	0.2 U	0.088 J	0.063 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	21000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U*	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	1.5	***880 BD***	***500 D***	***14 B***	***24 B***	***28 B***	***14***	***13***	0.15 JB	0.14 J	0.057 J	0.23 B	0.2 B
2-Hexanone	38	35	35	3 U	2 J	3 U	3 U	3 U	3 U	3 U	3 U	3.1	2.9 J
2-Butanone	300	200	10 U	3.1 J	10 U	10 U	10 U	10 U	4.4 J	4.5 J	10 U	47	32
4-Methyl-2-pentanone	6300	54	4.3 J	2.6 J	5 U	5 U	1.7 J	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	14	0.3 U	0.3 U	0.13 J	0.3 U	0.3 U	0.3 U	0.3 U	0.21 J	0.3 U	0.3 U	0.14 J	0.3 U
Methylene Chloride	3	***9.2***	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.21 J	0.5 U
1,1,2,2-Tetrachloroethane	0.076	0.2 U	0.2 U	0.2 U	***0.28***	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	1	***3.5***	***1.6***	0.22 J	0.3 J	0.11 J	0.1 J	0.096 J	0.084 J	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	59 J	12	22	10	0.79	0.47	0.47	0.13 J	0.12 J	0.1 J	0.41	0.51
1,1,2-Trichloro-1,2,2-trifluoroethane	10000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	1.2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	4.5	1.1	0.2 U	0.2 U	0.2 U	0.035 J	0.035 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.28	0.2 U	***0.64***	0.2 U	0.26	0.2 U	***3.9***	***4***	0.2 U	0.2 U	0.2 U	0.17 J	***0.29***
Trichloroethene	0.49	***35***	***11***	***0.55***	***0.59***	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	0.019	***0.92***	***1.1***	***0.13***	0.02 U	***0.15***	***0.095***	***0.079***	0.02 U	0.02 U	0.02 U	0.02 U	***0.053***
m,p-Xylene	190	***4000 D***	***1900 D***	***220***	***270 D***	21 B	8.2	8	0.72 B	0.5 U	0.31 J	0.92 F1	0.8
o-Xylene	190	***360 JBD***	170 D	28 B	47 D	19 B	12	12	0.58 B	0.54 B	0.5 U	1 B	2

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - VOCs

SAMPLE ID:		MW-111.031418	MW-111.060718	MW-112.030918	MW-112.060718	MW-114.030818	MW-114.060618	MW-115.030918	MW-115.060618	MW-116.030818	MW-116.060618	MW-117.030818	MW-117.060618
COLLECTION DATE:		3/14/2018	6/7/2018	3/9/2018	6/7/2018	3/8/2018	6/6/2018	3/9/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
Cyclohexane	13000	1.2 J	0.77 J	12	8.1	3 U	3 U	11	4	3 UJ	3 U	3 U	3 U
Methyl acetate	7000	15 U	15 U	15 U	15 U	6.5 J*	15 U	15 U*	15 U	15 UJ	15 U	15 U*	15 U
Methylcyclohexane	NE	13	13	46 J	25	470 D	170 J	72 *	32	3 UJ	0.66 J	0.73 J*	3 U
Acetone	6000	6 U	20 B	44 J	80 B	6 U	61	2400 D	6 U	280 J	6 U	280 D	6 U
Benzene	0.46	***2.4***	***1.5***	***0.48***	0.4	0.12 J	0.2 U	40 U	***0.55***	0.064 J	0.049 J	0.2 U	0.2 U
Carbon disulfide	700	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	0.46	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	***0.54***	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Chlorobenzene	50	0.76	0.2 U	0.2 U	0.2 U	0.69	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Chloroform	0.22	0.21	0.2 U	0.15 J	0.049 J	0.2 U	0.07 J	0.2 U	0.2 U	0.2 UJ	0.2 U	***0.31***	0.2 U
Isopropylbenzene	450	24	21	25	15	240 D	90 D	110 JD	31 J	1 UJ	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	0.00033	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U
Chlorodibromomethane	0.87	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	300	0.3 U	0.21 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U
1,3-Dichlorobenzene	600	0.3 U	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.48	0.3 U	***1***	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	2.8	0.32	0.38	0.1 J	0.11 J	0.2 U	0.2 U	0.056 J	0.061 J	0.2 UJ	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	36	0.095 J	0.13 J	0.2 U	0.2 U	0.2 U	0.2 U	0.32	0.2 U	0.2 UJ	0.2 U	0.2 U	0.055 J
trans-1,2-Dichloroethene	100	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.85	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Chloroethane	21000	0.5 U	0.5 U	0.5 U*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Ethylbenzene	1.5	0.28 B	0.72 B	0.4 B	0.25 B	***550 BD***	***8 BJ***	***480 D***	***270 D***	0.055 J	0.2 U	0.2 U	0.2 U
2-Hexanone	38	3 U	1.3 J	3 U	3 U	3 U	3 U	3 U	3 U	5.7	3 U	3 U	3 U
2-Butanone	300	10 U	10 U	10 U	8.6 J	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Methyl-2-pentanone	6300	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
Methyl tert-butyl ether	14	0.3 U	0.3 U	0.14 J	0.081 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U
Methylene Chloride	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
Styrene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8 B	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.076	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Tetrachloroethene	1	0.5 U	0.18 J	0.5 U	0.5 U	0.5 U	0.5 U	0.59	0.36 J	0.5 UJ	0.5 U	0.17 J	0.5 U
Toluene	600	1.1	0.47	0.17 J	0.063 J	18	4.8	210 D	60 D	0.2 UJ	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	1.2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	0.036 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.16 J	0.097 J	0.2 UJ	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	0.28	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U
Trichloroethene	0.49	0.2 U	0.17 J	0.2 U	0.2 U	0.2 U	0.2 U	***0.6***	0.39	0.2 UJ	0.2 U	0.2 U	0.2 U
Vinyl chloride	0.019	***0.066***	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	***0.061***	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U
m,p-Xylene	190	1.3	2.6	1.1	0.66	***3000 D***	0.5 U	***1700 D***	***710 D***	0.3 J	0.5 U	0.25 J	0.5 U
o-Xylene	190	8.9 B	8.9	1.3 B	0.65	***360 BD***	0.5 U	***810 D***	***340 D***	0.5 UJ	0.23 J	0.5 U	0.5 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3A

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - VOCs

SAMPLE ID:		MW-118.030818	MW-118.061118	MW-119.030618	MW-119.060618	MW-120.030818	MW-120.060618	MW-121.030818	MW-121.060618	MW-122.030818	MW-122.060618	MW-123.031218	MW-123.060518
COLLECTION DATE:		3/8/2018	6/11/2018	3/6/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/12/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
Cyclohexane	13000	150 UJ	300 UJ	3 U	0.51 J	0.46 J	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Methyl acetate	7000	180 J	1500 UJ	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Methylcyclohexane	NE	150 UJ	300 UJ	3 U	3 U	3.8 *	0.77 J	1.3 J	3 U	3 U	3 U	3 U	3 U
Acetone	6000	***71000 J***	***51000 J***	28	6 U	87	21	52	12	***34000 D***	6 U	22	5 J
Benzene	0.46	***3.3 J***	200 U	0.2 U	0.2 U	0.074 J	0.035 J	0.2 U	0.2 U	0.044 J	0.033 J	0.2 U	0.2 U
Carbon disulfide	700	30 UJ	300 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	0.46	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	50	20 U	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.085 J	0.2 U
Chloroform	0.22	20 UJ	200 U	0.041 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene	450	19 J	1000 U	0.26 J	0.41 J	1 U	1 U	0.38 J	1 U	0.24 J	0.37 J	0.21 J	1 U
1,2-Dibromo-3-Chloropropane	0.00033	200 UJ	2000 U	2 U	2 U	2 U	2 U	2 U	***1 J***	2 U	2 U	2 U	2 U
Chlorodibromomethane	0.87	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	300	30 UJ	300 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,3-Dichlorobenzene	600	30 UJ	300 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.48	30 UJ	300 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethane	2.8	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.099 J	0.09 J	0.2 U	0.2 U	0.94	0.2
1,1-Dichloroethene	1	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	36	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 J	0.2 U
trans-1,2-Dichloroethene	100	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.85	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.47	20 UJ	200 U	0.096 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	21000	50 UJ	500 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	1.5	25 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.11 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Hexanone	38	300 UJ	3000 UJ	1.3 J	3 U	3 U	3 U	3 U	3 U	1.7 J	1.3 J	1.4 J	3 U
2-Butanone	300	1000 UJ	10000 U	10 U	10 U	10 U	10 U	10 U	10 U	6.5 J	10 U	3.8 J	3.6 J
4-Methyl-2-pentanone	6300	200 J	5000 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	14	11 J	300 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.9	1
Methylene Chloride	3	500 UJ	5000 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	20 UJ	500 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.076	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	***0.087 J***	0.2 U
Tetrachloroethene	1	50 UJ	500 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	600	230	270	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.052 J	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	10000	50 UJ	500 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	1.2	30 UJ	300 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	30	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.059 J	0.2 U	0.2 U	0.2 U	0.04 J	0.2 U
1,1,2-Trichloroethane	0.28	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.08 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	0.49	20 UJ	200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	0.019	2 UJ	20 UJ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	***0.44***	***0.13***
m,p-Xylene	190	61	500 U	0.5 U	0.19 J	0.5 U	0.5 U	0.43 J	0.33 J	0.5 U	0.16 J	0.5 U	0.5 U
o-Xylene	190	24 J	500 U	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U	0.22 J	0.5 U	0.17 J	0.5 U	0.5 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		E-1.031218	E-1.060518	E-2.031418	E-2.061218	DUP-2.061218	E-3.031318	E-3.060518	E-4.031418	E-4.061118	E-5.031318	E-5.060518	E-6.031318
COLLECTION DATE:		3/12/2018	6/5/2018	3/14/2018	6/12/2018	6/12/2018	3/13/2018	6/5/2018	3/14/2018	6/11/2018	3/13/2018	6/5/2018	3/13/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/l)													
1,4-Dioxane	0.4	*3.2*	*3.5*	*0.51 J*	*0.51*	*0.45*	0.19 J	0.19 J	*0.85 J*	*0.71*	0.087 J	0.077 J	2 U
Acenaphthene	400	0.48	0.24	0.58	0.71	0.66	0.052 J	1.9 U	0.099 U	0.065 J	6.5	3.2 J	0.094 J
Acenaphthylene	NE	0.011 J	0.2 U	0.018 J	0.0095 J	0.0056 J	0.49 U	1.9 U	0.02 J	0.5 U	0.097 J	0.48 U	0.0029 J
Anthracene	1800	0.04 J	0.039 J	0.052 J	0.016 J	0.018 J	0.49 U	1.9 U	0.012 J	0.5 U	0.42	0.13 J	0.02 J
Benzo(a)anthracene	0.03	0.0055 J	0.0061 J	*0.088 J*	0.014 J	0.013 J	0.49 U	1.9 U	0.099 U	0.5 U	0.016 J	0.48 U	0.0057 J
Benzo(a)pyrene	0.025	0.099 U	0.2 U	*0.13*	0.099 U	0.099 U	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
Benzo(b)fluoranthene	0.2	0.099 U	0.2 U	0.074 J	0.099 U	0.099 U	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
Benzo(g,h,i)perylene	NE	0.099 U	0.2 U	0.077 J	0.099 U	0.099 U	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
Benzo(k)fluoranthene	0.5	0.0039 J	0.2 U	0.085 J	0.099 U	0.099 U	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
Chrysene	5	0.0054 J	0.2 U	0.092 J	0.013 J	0.013 J	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
Dibenzo(a,h)anthracene	0.025	0.099 U	0.2 U	0.022 J	0.099 U	0.099 U	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
Fluoranthene	300	0.054 J	0.073 J	0.13	0.027 J	0.028 J	0.49 U	1.9 U	0.0058 J	0.5 U	0.26 J	0.089 J	0.046 J
Fluorene	290	0.21	0.11 J	0.02 J	0.099 U	0.099 U	0.034 J	1.9 U	0.012 J	0.5 U	4.3 J	1.1	0.0064 J
Indeno(1,2,3-cd)pyrene	0.2	0.099 U	0.2 U	0.063 J	0.099 U	0.099 U	0.49 U	1.9 U	0.099 U	0.5 U	0.33 U	0.48 U	0.098 U
2-Methylnaphthalene	30	0.099 U	0.2 U	0.0094 J	0.099 U	0.099 U	0.14 J	0.088 J	0.099 U	0.5 U	0.023 J	0.48 U	0.098 U
Naphthalene	0.17	0.023 J	0.023 J	0.019 J	0.099 U	0.099 U	*1.8*	*0.65 J*	0.091 J	0.5 U	0.12 J	0.028 J	0.0051 J
Pentachlorophenol	0.041	0.2 U	0.39 UJ	0.19 U	0.2 UJ	0.2 UJ	0.97 U	3.9 UJ	0.2 U	0.99 UJ	0.66 U	0.96 UJ	0.2 U
Phenanthrene	NE	0.012 J	0.2 U	0.059 J	0.099 U	0.099 U	2.3 J	1.9 UJ	0.021 J	0.5 U	1.4 J	0.063 J	0.007 J
Pyrene	120	0.044 J	0.055 J	0.25	0.14	0.13	0.49 U	1.9 U	0.099 U	0.5 U	0.13 J	0.055 J	0.048 J
Acetophenone	700	9.9 U	9.8 U	9.7 U	9.9 U	9.9 U	9.7 U	19 U	9.9 U	9.9 U	9.9 U	9.6 U	9.8 U
1,1-Biphenyl	0.83	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	4.9 U	4.8 U	4.9 U
Bis(2-ethylhexyl)phthalate	3	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	4.9 U	4.8 U	4.9 U
Butylbenzylphthalate	16	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	4.9 U	4.8 U	4.9 U
Caprolactam	4000	9.9 U	9.8 U	9.7 U	9.9 U	9.9 U	9.7 U	19 U	9.9 U	9.9 U	9.9 U	9.6 U	9.8 U
4-Chloroaniline	0.37	9.9 U	9.8 U	9.7 U	9.9 U	9.9 U	9.7 U	19 U	9.9 U	9.9 U	9.9 U	9.6 U	9.8 U
2-Methylphenol	50	9.9 U	9.8 U	9.7 U	9.9 U	9.9 U	9.7 U	19 U	9.9 U	9.9 U	9.9 U	9.6 U	9.8 U
4-Methylphenol	50	9.9 U	9.8 U	9.7 U	9.9 U	9.9 U	9.7 U	19 U	9.9 U	9.9 U	9.9 U	9.6 U	9.8 U
Dibenzofuran	7.9	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	2.8 J	4.8 U	4.9 U
Di-n-butylphthalate	700	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	0.6 J	4.8 U	4.9 U
Diethylphthalate	6000	4.9 U	0.21 J	0.45 J	5 U	5 U	0.4 J	9.7 U	0.49 J	5 U	4.9 U	4.8 U	0.59 J
2,4-Dimethylphenol	100	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	4.9 U	4.8 U	4.9 U
Phenol	2000	9.9 U	9.8 U	1.2 J	1.7 J	1.6 J	9.7 U	19 U	9.9 U	9.9 U	9.9 U	9.6 U	9.8 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		DUP-2.031318	E-6.061218	E-7.031318	E-7.060718	E-8.031418	E-8.060418	MW-101.031418	MW-101.060518	MW-102.030618	MW-102.061218	MW-103.030618
COLLECTION DATE:		3/13/2018	6/12/2018	3/13/2018	6/7/2018	3/14/2018	6/4/2018	3/14/2018	6/5/2018	3/6/2018	6/12/2018	3/6/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/l)												
1,4-Dioxane	0.4	0.2 UJ	0.17 J	0.078 J	0.2 U	*1.2 J*	*0.96*	0.18 J	0.14 J	*2.3*	*5.9*	*0.86*
Acenaphthene	400	0.1	0.0069 J	0.1 U	0.1 U	0.054 J	0.072 J	0.098 U	0.098 U	0.069 J	0.062 J	0.032 J
Acenaphthylene	NE	0.003 J	0.0037 J	0.1 U	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.011 J	0.0046 J	0.097 U
Anthracene	1800	0.021 J	0.01 J	0.0074 J	0.1 U	0.0075 J	0.012 J	0.0068 J	0.011 J	0.039 J	0.011 J	0.021 J
Benzo(a)anthracene	0.03	0.0047 J	0.019 J	0.0036 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	*0.049 J*	0.012 J	*0.033 J*
Benzo(a)pyrene	0.025	0.098 U	0.025 J	0.1 U	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	*0.064 J*	0.012 J	*0.038 J*
Benzo(b)fluoranthene	0.2	0.098 U	0.024 J	0.0059 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.049 J	0.01 J	0.03 J
Benzo(g,h,i)perylene	NE	0.098 U	0.025 J	0.0097 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.041 J	0.0084 J	0.028 J
Benzo(k)fluoranthene	0.5	0.098 U	0.021 J	0.0058 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.049 J	0.011 J	0.03 J
Chrysene	5	0.098 U	0.018 J	0.1 U	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.049 J	0.0096 J	0.035 J
Dibenzo(a,h)anthracene	0.025	0.098 U	0.0092 J	0.0055 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.012 J	0.098 U	0.0071 J
Fluoranthene	300	0.052 J	0.044 J	0.007 J	0.1 U	0.0079 J	0.012 J	0.098 U	0.098 U	0.12	0.019 J	0.081 J
Fluorene	290	0.0065 J	0.1 UJ	0.1 U	0.1 U	0.005 J	0.2 U	0.098 U	0.098 U	0.045 J	0.013 J	0.02 J
Indeno(1,2,3-cd)pyrene	0.2	0.098 U	0.022 J	0.012 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.039 J	0.0076 J	0.021 J
2-Methylnaphthalene	30	0.0044 J	0.1 UJ	0.1 U	0.1 U	0.004 J	0.2 U	0.098 U	0.098 U	0.017 J	0.098 U	0.0065 J
Naphthalene	0.17	0.0068 J	0.1 UJ	0.1 U	0.1 U	0.016 J	0.016 J	0.098 U	0.0055 J	0.064 J	0.098 U	0.012 J
Pentachlorophenol	0.041	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.39 UJ	0.2 U	0.2 U	0.2 U	0.2 UJ	0.19 U
Phenanthrene	NE	0.0082 J	0.014 J	0.1 U	0.1 U	0.017 J	0.025 J	0.098 U	0.0056 J	0.13	0.098 U	0.043 J
Pyrene	120	0.046 J	0.061 J	0.1 U	0.1 U	0.098 U	0.016 J	0.098 U	0.098 U	0.11	0.022 J	0.097
Acetophenone	700	9.8 U	10 UJ	10 U	10 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U
1,1-Biphenyl	0.83	4.9 U	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U
Bis(2-ethylhexyl)phthalate	3	4.9 U	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U
Butylbenzylphthalate	16	4.9 U	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U
Caprolactam	4000	9.8 U	10 UJ	10 U	10 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U
4-Chloroaniline	0.37	9.8 U	10 UJ	10 U	10 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U
2-Methylphenol	50	9.8 U	10 UJ	10 U	10 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U
4-Methylphenol	50	9.8 U	10 UJ	10 U	10 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U
Dibenzofuran	7.9	4.9 U	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U
Di-n-butylphthalate	700	4.9 U	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U
Diethylphthalate	6000	0.81 J	5.1 UJ	5.1 U	5.1 U	0.41 J	4.9 U	0.43 J	4.9 U	0.49 J	4.9 U	4.8 U
2,4-Dimethylphenol	100	4.9 U	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U
Phenol	2000	9.8 U	10 UJ	10 U	10 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.7 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2B

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		MW-103.061218	MW-104.031418	MW-104.060718	MW-105.031318	MW-105.060518	MW-106.031318	MW-106.060418	MW-107.030618	MW-107.060718
COLLECTION DATE:		6/12/2018	3/14/2018	6/7/2018	3/13/2018	6/5/2018	3/13/2018	6/4/2018	3/6/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/l)										
1,4-Dioxane	0.4	*1.4*	*0.48 J*	0.38	0.2 UJ	0.2 U	*16 D*	*1.3*	0.1 J	0.2 U
Acenaphthene	400	0.1 UJ	0.54	0.64 J	0.052 J	0.025 J	0.9 J	9.6 U	0.98 U	10 U
Acenaphthylene	NE	0.1 UJ	0.036 J	1 U	0.017 J	0.01 J	0.24 J	9.6 U	0.98 U	10 U
Anthracene	1800	0.1 UJ	0.13	0.15 J	0.084 J	0.044 J	1 J	9.6 U	5.3	10 U
Benzo(a)anthracene	0.03	0.1 UJ	*0.052 J*	*0.11 J*	0.0053 J	0.19 U	2 U	9.6 U	0.98 U	10 U
Benzo(a)pyrene	0.025	0.1 UJ	*0.044 J*	*0.12 J*	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
Benzo(b)fluoranthene	0.2	0.1 UJ	0.034 J	0.076 J	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
Benzo(g,h,i)perylene	NE	0.1 UJ	0.025 J	0.061 J	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
Benzo(k)fluoranthene	0.5	0.1 UJ	0.031 J	0.074 J	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
Chrysene	5	0.1 UJ	0.058 J	0.11 J	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
Dibenzo(a,h)anthracene	0.025	0.1 UJ	0.0079 J	1 U	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
Fluoranthene	300	0.1 UJ	0.24	0.3 J	0.025 J	0.012 J	0.14 J	9.6 U	0.14 J	10 U
Fluorene	290	0.1 UJ	0.3	0.31 J	0.12	0.097 J	0.85 J	1.3 J	0.62 J	1.3 J
Indeno(1,2,3-cd)pyrene	0.2	0.1 UJ	0.022 J	0.054 J	0.098 U	0.19 U	2 U	9.6 U	0.98 U	10 U
2-Methylnaphthalene	30	0.1 UJ	0.043 J	0.047 J	0.026 J	0.023 J	24 D	*31*	5.6	7.4 J
Naphthalene	0.17	0.1 UJ	0.14	*0.23 J*	0.15	0.15 J	*59 D*	*74*	*1.5 D*	*5.1 J*
Pentachlorophenol	0.041	0.2 UJ	0.2 U	2 UJ	0.2 U	0.38 UJ	3.9 U	19 UJ	2 U	21 UJ
Phenanthrene	NE	0.1 UJ	0.45	0.61 J	0.093 J	0.062 J	2.8 J	2.5 J	1.4 J	1.6 J
Pyrene	120	0.1 UJ	0.26	0.32 J	0.017 J	0.016 J	0.12 J	9.6 U	0.12 J	10 U
Acetophenone	700	10 U	10 U	0.68 J	9.8 U	9.6 U	49 U	190 U	9.8 U	100 U
1,1-Biphenyl	0.83	5 UJ	*32*	*100 D*	4.9 U	4.8 U	*17 J*	*39 J*	4.9 U	52 U
Bis(2-ethylhexyl)phthalate	3	5 UJ	5 U	5.1 U	4.9 U	4.8 U	24 U	96 U	4.9 U	52 U
Butylbenzylphthalate	16	5 UJ	5 U	5.1 U	4.9 U	4.8 U	24 U	96 U	4.9 U	52 U
Caprolactam	4000	10 UJ	10 U	10 U	9.8 U	9.6 U	49 U	190 U	9.8 U	100 U
4-Chloroaniline	0.37	10 U	10 U	10 U	9.8 U	9.6 U	49 U	190 U	9.8 U	100 U
2-Methylphenol	50	10 UJ	10 U	10 U	9.8 U	9.6 U	16 J	190 U	4.4 J	100 U
4-Methylphenol	50	10 UJ	10 U	10 U	9.8 U	9.6 U	14 J	190 U	5.2 J	14 J
Dibenzofuran	7.9	5 UJ	5 U	5.1 U	4.9 U	4.8 U	24 U	96 U	4.9 U	52 U
Di-n-butylphthalate	700	5 UJ	5 U	5.1 U	4.9 U	4.8 U	24 U	96 U	3.1 J	52 U
Diethylphthalate	6000	5 UJ	0.72 J	5.1 U	0.85 J	4.8 U	24 U	96 U	4.9 U	52 U
2,4-Dimethylphenol	100	5 UJ	5 U	5.1 U	4.9 U	4.8 U	24 U	30 J	4 J	52 U
Phenol	2000	10 U	20	40	9.8 U	9.6 U	21 J	190 U	2.5 J	100 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2B

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		MW-108.030618	MW-108.060518	DUP-1.060518	MW-109.030918	DUP-1.030918	MW-109.060518	MW-110.031418	MW-110.060718	MW-111.031418	MW-111.060718
COLLECTION DATE:		3/6/2018	6/5/2018	6/5/2018	3/9/2018	3/9/2018	6/5/2018	3/14/2018	6/7/2018	3/14/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/l)											
1,4-Dioxane	0.4	*0.81*	*0.51*	*0.48*	*3.3*	*3.7*	*4.7*	*9.6*	*6.5*	0.14 J	0.11 J
Acenaphthene	400	0.44 J	0.35 J	0.35 J	0.061 J	0.2 U	0.059 J	14	9.1 J	0.14 J	0.13 J
Acenaphthylene	NE	1 U	1.9 U	1.9 U	0.012 J	0.2 U	0.48 U	0.98 U	10 U	0.2 U	1 U
Anthracene	1800	0.064 J	1.9 U	1.9 U	0.2 U	0.2 U	0.044 J	2.7	2 J	0.037 J	1 U
Benzo(a)anthracene	0.03	*0.076 J*	1.9 U	1.9 U	0.021 J	0.027 J	0.023 J	0.98 U	10 U	0.011 J	1 U
Benzo(a)pyrene	0.025	*0.13 J*	1.9 U	1.9 U	0.017 J	0.02 J	0.48 U	0.98 U	10 U	0.2 U	1 U
Benzo(b)fluoranthene	0.2	1 U	1.9 U	1.9 U	0.019 J	0.021 J	0.48 U	0.98 U	10 U	0.2 U	1 U
Benzo(g,h,i)perylene	NE	1 U	1.9 U	1.9 U	0.015 J	0.017 J	0.48 U	0.98 U	10 U	0.2 U	1 U
Benzo(k)fluoranthene	0.5	1 U	1.9 U	1.9 U	0.014 J	0.017 J	0.48 U	0.98 U	10 U	0.2 U	1 U
Chrysene	5	0.072 J	1.9 U	1.9 U	0.024 J	0.03 J	0.48 U	0.98 U	10 U	0.01 J	1 U
Dibenzo(a,h)anthracene	0.025	1 U	1.9 U	1.9 U	0.2 U	0.2 U	0.48 U	0.98 U	10 U	0.2 U	1 U
Fluoranthene	300	0.23 J	1.9 U	1.9 U	0.049 J	0.058 J	0.05 J	0.36 J	0.98 J	0.035 J	1 U
Fluorene	290	0.16 J	0.13 J	0.14 J	0.036 J	0.036 J	0.043 J	7.7	7 J	0.072 J	0.07 J
Indeno(1,2,3-cd)pyrene	0.2	1 U	1.9 U	1.9 U	0.013 J	0.015 J	0.48 U	0.98 U	10 U	0.2 U	1 U
2-Methylnaphthalene	30	0.33 J	0.19 J	0.069 J	0.11 J	0.12 J	0.058 J	2	0.99 J	0.2 U	1 U
Naphthalene	0.17	*16*	*8.9*	*9.8*	*0.22 D*	0.17 J	0.15 J	*0.64 J*	10 U	*0.19 J*	1 U
Pentachlorophenol	0.041	2 U	3.8 UJ	3.8 UJ	*0.18 J*	*0.16 J*	0.96 UJ	2 U	20 UJ	0.39 U	2 UJ
Phenanthrene	NE	0.38 J	0.22 J	0.24 J	0.07 J	0.081 J	0.094 J	5.7	12	0.027 J	1 U
Pyrene	120	0.23 J	1.9 U	0.058 J	0.044 J	0.054 J	0.061 J	0.5 J	0.61 J	0.032 J	0.034 J
Acetophenone	700	10 U	96 U	96 U	10 U	10 U	9.6 U	9.8 U	40 U	9.8 U	10 U
1,1-Biphenyl	0.83	5 U	48 U	48 U	5 U	5 U	4.8 U	4.9 U	20 U	4.9 U	5.1 U
Bis(2-ethylhexyl)phthalate	3	5 U	48 U	48 U	5 U	5 U	4.8 U	4.9 U	20 U	4.9 U	5.1 U
Butylbenzylphthalate	16	5 U	48 U	48 U	5 U	5 U	4.8 U	4.9 U	20 U	4.9 U	5.1 U
Caprolactam	4000	10 U	96 U	96 U	10 U	10 U	9.6 U	9.8 U	40 U	9.8 U	10 U
4-Chloroaniline	0.37	10 U	96 U	96 U	10 U	10 U	9.6 U	9.8 U	40 U	*3.1 J*	10 U
2-Methylphenol	50	10 U	96 U	96 U	10 U	10 U	9.6 U	9.8 U	40 U	9.8 U	10 U
4-Methylphenol	50	10 U	96 U	96 U	10 U	10 U	9.6 U	9.8 U	40 U	9.8 U	10 U
Dibenzofuran	7.9	5 U	48 U	48 U	5 U	5 U	4.8 U	3.3 J	20 U	4.9 U	5.1 U
Di-n-butylphthalate	700	5 U	48 U	48 U	5 U	5 U	4.8 U	4.9 U	20 U	4.9 U	5.1 U
Diethylphthalate	6000	0.38 JB	48 U	48 U	0.75 J	0.68 J	4.8 U	4.9 U	20 U	0.97 JB	5.1 U
2,4-Dimethylphenol	100	5 U	48 U	48 U	5 U	5 U	4.8 U	4.9 U	20 U	4.9 U	5.1 U
Phenol	2000	10 U	96 U	96 U	10 U	10 U	9.6 U	9.8 U	40 U	9.8 U	10 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		MW-112.030918	MW-112.060718	MW-114.030818	MW-114.060618	MW-115.030918	MW-115.060618	MW-116.030818	MW-116.060618	MW-117.030818
COLLECTION DATE:		3/9/2018	6/7/2018	3/8/2018	6/6/2018	3/9/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/l)										
1,4-Dioxane	0.4	*1.2*	*2.1*	0.2 U	0.2 U	0.2 U	0.2 U	*4*	*2.8*	*7.4*
Acenaphthene	400	0.69	0.4 J	0.76	9.4 U	10 U	9.5 U	0.47	0.41	0.99 U
Acenaphthylene	NE	0.033 J	2 U	0.5 U	9.4 U	10 U	9.5 U	0.036 J	0.026 J	0.99 U
Anthracene	1800	0.08 J	2 U	0.064 J	9.4 U	10 U	9.5 U	0.14	0.078 J	0.99 U
Benzo(a)anthracene	0.03	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	*0.033 J*	*0.041 J*	0.99 U
Benzo(a)pyrene	0.025	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	0.1 U	0.094 U	0.99 U
Benzo(b)fluoranthene	0.2	0.0085 J	2 U	0.5 U	9.4 U	10 U	9.5 U	0.012 J	0.013 J	0.99 U
Benzo(g,h,i)perylene	NE	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	0.006 J	0.0076 J	0.99 U
Benzo(k)fluoranthene	0.5	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	0.011 J	0.013 J	0.99 U
Chrysene	5	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	0.045 J	0.044 J	0.99 U
Dibenzo(a,h)anthracene	0.025	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	0.1 U	0.094 U	0.99 U
Fluoranthene	300	0.077 J	0.14 J	0.051 J	9.4 U	10 U	9.5 U	0.31	0.22	0.99 U
Fluorene	290	0.35	0.25 J	0.87	0.53 J	0.64 J	0.77 J	0.22	0.15	0.99 U
Indeno(1,2,3-cd)pyrene	0.2	0.1 U	2 U	0.5 U	9.4 U	10 U	9.5 U	0.005 J	0.0071 J	0.99 U
2-Methylnaphthalene	30	0.1 U	2 U	5.9	1.6 J	7	7.5 J	0.023 J	0.027 J	0.99 U
Naphthalene	0.17	0.088 J	2 U	*8.3 D*	*1.5 J*	*89*	*20*	0.084 J	0.071 J	0.99 U
Pentachlorophenol	0.041	0.2 U	4 UJ	0.99 U	19 UJ	21 U	19 UJ	0.2 U	0.19 UJ	2 U
Phenanthrene	NE	0.019 J	2 U	0.81	0.63 J	1.7 J	2.1 J	0.5	0.38	0.99 U
Pyrene	120	0.048 J	0.11 J	0.037 J	9.4 U	10 U	9.5 U	0.33	0.33	0.04 J
Acetophenone	700	10 U	20 U	9.9 U	19 U	10 U	19 J	10 U	9.4 U	9.9 U
1,1-Biphenyl	0.83	5.1 U	10 U	5 U	9.4 U	0.65 J	48 U	5.1 U	4.7 U	5 U
Bis(2-ethylhexyl)phthalate	3	5.1 U	10 U	5 U	9.4 U	*3.1 J*	48 U	1.2 J	4.7 U	1.2 J
Butylbenzylphthalate	16	5.1 U	10 U	5 U	9.4 U	5.1 U	48 U	1.1 J	4.7 U	0.93 J
Caprolactam	4000	10 U	20 U	9.9 U	19 U	10 U	95 U	0.99 J	0.6 J	9.9 U
4-Chloroaniline	0.37	10 U	20 U	9.9 U	19 U	10 U	95 U	10 U	9.4 U	9.9 U
2-Methylphenol	50	10 U	20 U	9.9 U	19 U	10 U	95 U	10 U	9.4 U	9.9 U
4-Methylphenol	50	10 U	20 U	9.9 U	19 U	10 U	95 UJ	2.3 J	9.4 U	9.9 U
Dibenzofuran	7.9	5.1 U	10 U	5 U	9.4 U	5.1 U	48 U	5.1 U	4.7 U	5 U
Di-n-butylphthalate	700	5.1 U	10 U	5 U	9.4 U	5.1 U	48 U	5.1 U	4.7 U	5 U
Diethylphthalate	6000	5.1 U	10 U	5 U	9.4 U	0.4 J	48 U	0.5 J	4.7 U	5 JUJ
2,4-Dimethylphenol	100	5.1 U	10 U	10	9.4 U	5.1 U	48 U	5.1 U	4.7 U	5 U
Phenol	2000	10 U	20 U	9.9 U	19 U	10 U	95 U	10 U	9.4 U	9.9 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		MW-117.060618	MW-118.030818	MW-118.061118	MW-119.030618	MW-119.060618	MW-120.030818	MW-120.060618	MW-121.030818	MW-121.060618
COLLECTION DATE:		6/6/2018	3/8/2018	6/11/2018	3/6/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result
SVOCs (ug/l)										
1,4-Dioxane	0.4	*20*	0.2 UJ	1 R	0.2 U	*0.98*	0.19 J	0.18 J	*1.8*	*1.9*
Acenaphthene	400	0.095 U	0.52 J	0.37 J	0.1	0.44	0.029 J	0.036 J	0.31	0.25
Acenaphthylene	NE	0.095 U	5 U	5.2 UJ	0.1 U	0.011 J	0.1 U	0.096 UJ	0.022 J	0.012 J
Anthracene	1800	0.0065 J	0.51 J	5.2 U	0.029 J	0.064 J	0.011 J	0.0084 J	0.065 J	0.048 J
Benzo(a)anthracene	0.03	0.0037 J	5 U	*0.3 J*	0.0065 J	*0.039 J*	0.011 J	0.015 J	0.029 J	0.024 J
Benzo(a)pyrene	0.025	0.095 U	5 U	5.2 U	0.1 U	0.093 U	0.1 U	0.096 U	0.1 U	0.094 U
Benzo(b)fluoranthene	0.2	0.095 U	5 U	*0.27 J*	0.1 U	0.032 J	0.0066 J	0.011 J	0.016 J	0.0071 J
Benzo(g,h,i)perylene	NE	0.095 U	5 U	5.2 U	0.1 U	0.021 J	0.1 U	0.0093 J	0.011 J	0.094 U
Benzo(k)fluoranthene	0.5	0.095 U	5 U	5.2 U	0.004 J	0.026 J	0.0052 J	0.011 J	0.015 J	0.0076 J
Chrysene	5	0.095 U	5 U	5.2 U	0.0089 J	0.039 J	0.016 J	0.014 J	0.042 J	0.03 J
Dibenzo(a,h)anthracene	0.025	0.095 U	5 U	5.2 U	0.1 U	0.0076 J	0.1 U	0.096 U	0.1 U	0.094 U
Fluoranthene	300	0.019 J	0.81 J	0.61 J	0.048 J	0.099	0.049 J	0.025 J	0.24	0.12
Fluorene	290	0.095 U	0.45 J	0.29 J	0.055 J	0.18	0.0096 J	0.0064 J	0.17	0.1
Indeno(1,2,3-cd)pyrene	0.2	0.095 U	5 U	5.2 U	0.1 U	0.02 J	0.1 U	0.008 J	0.01 J	0.094 U
2-Methylnaphthalene	30	0.095 U	0.26 J	0.22 J	0.0056 J	0.032 J	0.005 J	0.0079 J	0.049 J	0.04 J
Naphthalene	0.17	0.0057 J	*0.65 J*	5.2 U	0.043 J	*0.2*	0.021 J	0.033 J	0.072 J	0.057 J
Pentachlorophenol	0.041	0.19 UJ	10 U	10 UJ	0.2 U	0.19 UJ	0.2 U	0.19 UJ	0.2 U	0.19 UJ
Phenanthrene	NE	0.011 J	1.3 J	0.78 J	0.096 J	0.28	0.029 J	0.096 U	0.39	0.23
Pyrene	120	0.026 J	0.57 J	0.69 J	0.06 J	0.19	0.082 J	0.041 J	0.28	0.2
Acetophenone	700	9.5 U	100 U	100 U	10 U	9.3 U	10 U	9.6 U	10 U	9.4 U
1,1-Biphenyl	0.83	4.8 U	50 U	52 U	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U
Bis(2-ethylhexyl)phthalate	3	4.8 U	50 U	52 U	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U
Butylbenzylphthalate	16	4.8 U	50 U	52 U	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U
Caprolactam	4000	9.5 U	100 U	100 U	10 U	9.3 U	10 U	0.42 J	10 U	9.4 U
4-Chloroaniline	0.37	9.5 U	100 U	100 U	10 U	9.3 U	10 U	9.6 U	10 U	9.4 U
2-Methylphenol	50	9.5 U	100 U	100 U	10 U	9.3 U	10 U	9.6 U	10 U	9.4 U
4-Methylphenol	50	9.5 U	*61 J*	*56 J*	10 U	9.3 U	10 U	9.6 U	10 U	9.4 U
Dibenzofuran	7.9	4.8 U	50 U	52 U	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U
Di-n-butylphthalate	700	4.8 U	50 U	52 U	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U
Diethylphthalate	6000	4.8 U	50 U	52 U	0.47 J	4.6 U	0.54 J	4.8 U	0.45 J	4.7 U
2,4-Dimethylphenol	100	4.8 U	50 U	52 U	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U
Phenol	2000	9.5 U	100 U	100 U	10 U	9.3 U	10 U	9.6 U	10 U	9.4 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 2-3B

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		MW-122.030818	MW-122.060618	MW-123.031218	MW-123.060518
COLLECTION DATE:		3/8/2018	6/6/2018	3/12/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result
SVOCs (ug/l)					
1,4-Dioxane	0.4	0.33	0.37	*13*	*8.5*
Acenaphthene	400	0.64	0.51	0.3	0.38
Acenaphthylene	NE	0.1 U	0.096 U	0.099 U	0.014 J
Anthracene	1800	0.042 J	0.02 J	0.018 J	0.018 J
Benzo(a)anthracene	0.03	0.1 U	0.096 U	0.005 J	0.0035 J
Benzo(a)pyrene	0.025	0.1 U	0.096 U	0.099 U	0.098 U
Benzo(b)fluoranthene	0.2	0.1 U	0.096 U	0.099 U	0.098 U
Benzo(g,h,i)perylene	NE	0.1 U	0.096 U	0.099 U	0.098 UJ
Benzo(k)fluoranthene	0.5	0.1 U	0.096 U	0.099 U	0.098 U
Chrysene	5	0.1 U	0.096 U	0.0049 J	0.098 U
Dibenzo(a,h)anthracene	0.025	0.1 U	0.096 U	0.099 U	0.098 U
Fluoranthene	300	0.02 J	0.0038 J	0.012 J	0.0056 J
Fluorene	290	1	0.61	0.023 J	0.0077 J
Indeno(1,2,3-cd)pyrene	0.2	0.1 U	0.096 U	0.099 U	0.098 U
2-Methylnaphthalene	30	0.1 U	0.096 U	0.0053 J	0.0048 J
Naphthalene	0.17	0.062 J	0.034 J	0.01 J	0.0044 J
Pentachlorophenol	0.041	0.2 U	0.19 UJ	0.2 U	0.2 UJ
Phenanthrene	NE	0.037 J	0.096 U	0.0076 J	0.098 U
Pyrene	120	0.045 J	0.026 J	0.02 J	0.015 J
Acetophenone	700	10 U	9.6 U	9.9 U	9.8 U
1,1-Biphenyl	0.83	5.1 U	4.8 U	4.9 U	4.9 U
Bis(2-ethylhexyl)phthalate	3	5.1 U	4.8 U	4.9 U	4.9 U
Butylbenzylphthalate	16	5.1 U	4.8 U	4.9 U	4.9 U
Caprolactam	4000	10 U	9.6 U	9.9 U	9.8 U
4-Chloroaniline	0.37	10 U	9.6 U	9.9 U	9.8 U
2-Methylphenol	50	10 U	9.6 U	9.9 U	9.8 U
4-Methylphenol	50	10 U	9.6 U	9.9 U	9.8 U
Dibenzofuran	7.9	5.1 U	4.8 U	4.9 U	4.9 U
Di-n-butylphthalate	700	5.1 U	4.8 U	4.9 U	4.9 U
Diethylphthalate	6000	5.1 U	4.8 U	0.33 J	4.9 U
2,4-Dimethylphenol	100	5.1 U	4.8 U	4.9 U	4.9 U
Phenol	2000	10 U	9.6 U	9.9 U	9.8 U

Notes:

PAL – Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-32

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		E-1.031218	E-1.060518	E-2.031418	E-2.061218	DUP-2.061218	E-3.031318	E-3.060518	E-4.031418	E-4.061118	E-5.031318	E-5.060518
COLLECTION DATE:		3/12/2018	6/5/2018	3/14/2018	6/12/2018	6/12/2018	3/13/2018	6/5/2018	3/14/2018	6/11/2018	3/13/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)												
Mercury	0.63	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aluminum	200	99.5 B	126	89.2	7.2 J	7.1 J	43.3	54.9	26.8	33.9	87.6	30.7
Antimony	6	2 U	2 U	2 U	2 U	2 U	0.29 J	2 U	0.52 J	0.27 J	2 U	2 U
Arsenic	0.052	***5.5***	***3.5 J***	***10.6***	***3.2***	***2.9***	***11.7***	***4.9 J***	***9.1***	***2.6***	***12.1***	***4.9 J***
Barium	2000	195	205	99.5	103	100	282	287	281	246	170	175
Beryllium	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	4	1 U	1 U	1 U	1 U	1 U	0.13 J	1 U	0.18 J	0.082 J	1 U	1 U
Calcium	NE	178000	182000	99900	95700	94300	125000	124000	127000	93500	88000	74400
Chromium	70	2 U	0.85 J	1.6 J	1.1 J	0.85 J	1.7 J	1.4 J	1 J	2 U	0.98 J	0.83 J
Cobalt	6	0.46 J	0.42 J	0.5 J	0.44 J	0.43 J	0.71 J	0.71 J	4	1	0.88 J	0.65 J
Copper	800	1.6 J	1.2 J	3.2	2 U	2 U	2.4	1.7 J	4.1	5.2 B	2.4	1.2 J
Iron	300	***13300***	***11800 J***	***507***	***385***	***370***	***14700***	***14500 J***	***5110***	***4340***	***20700***	***20100 J***
Lead	5	1.3	1.1	3.7	0.43 J	0.37 J	1.7	2.1	***7.1***	***7.4***	1.4	0.55 J
Magnesium	NE	15300	16000 J	17600	16100	15700	15600	16300 J	11400	9420	18400	19500 J
Manganese	50	***3010***	***2870 J***	***317 J***	***339***	***330***	***1100 J***	***1090 J***	***2380 J***	***753***	***1450 J***	***1630 J***
Nickel	100	3.3	1.5	5.6 J	4.5	4.4	3.6 J+	1.2	56.8 J+	23.3	2.4 J+	1.1
Potassium	NE	7920	8200	8710	9740	9500	11000	11000	8310	6740	12500	12200
Selenium	40	19.8	11.8	33.7	10.6	10	39.4	14.9	25.3	6	23.9	8.8
Silver	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	50000	***64100***	***68600***	38800	42300	47600	***60800***	***57600***	***56100***	***66600***	***86400***	***78700***
Vanadium	86	5 U	0.94 J	5 U	5 U	5 U	5 U	1.2 J	5 U	5 U	5 U	0.68 J
Zinc	2000	14.6	8.5	7.8	1.2 J	2 U	7	5.1	904	392	2.4	1.5 J
Chromium, hexavalent	0.035	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 U	10 U
Cyanide, Total	1.5	***4.3 J***	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	***3.9 J***	***5.5***

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

J+ - The result is an estimated quantity, and the result may be biased high.

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE 3-3

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		E-6.031318	DUP-2.031318	E-6.061218	E-7.031318	E-7.060718	E-8.031418	E-8.060418	MW-101.031418	MW-101.060518	MW-102.030618
COLLECTION DATE:		3/13/2018	3/13/2018	6/12/2018	3/13/2018	6/7/2018	3/14/2018	6/4/2018	3/14/2018	6/5/2018	3/6/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)											
Mercury	0.63	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aluminum	200	15 J	16.1 J	30.9	154	10.8 J	15.2 J	7.7 J	25.9	9 J	61.1 B
Antimony	6	0.33 J	0.36 J	3.4	1.4 J	2.5	2 U	2 U	***22.7***	1.8 J	0.98 J
Arsenic	0.052	***4.8***	***4.7***	***3.2***	***5.7***	***4.8***	***7.2***	***3.1 J***	***13.2***	***5.1 J***	***10.3***
Barium	2000	93.2	96.8	219	155	352	296	284	86.3	112	168
Beryllium	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	4	1 U	1 U	1 U	0.18 J	0.59 J	1 U	1 U	0.28 J	1 U	0.28 J
Calcium	NE	79500	80000	120000	77400	130000	109000	96600	238000	193000	269000
Chromium	70	0.75 J	1.4 J	2 U	3	4.5	0.54 J	0.54 J	0.77 J	2 U	2 U
Cobalt	6	0.23 J	0.26 J	1	0.26 J	0.24 J	0.35 J	0.41 J	0.71 J	1.2	***8.7***
Copper	800	0.91 J	0.95 J	2 U	4.8	4	1 J	0.67 J	11	4	3.8
Iron	300	***1550***	***1590***	***670***	***1690***	165 J	***16800***	***13500 J***	85.1 J	***1290 J***	***10200***
Lead	5	2	2.1	3.3	2	1.4	0.55 J	1 U	1 U	1 U	***12.8***
Magnesium	NE	6490	6520	12400	10200	15000	12800	12100 J	22000	17500 J	22100
Manganese	50	***991 J***	***1010 J***	***919***	***104 J***	44.4	***726 J***	***625 J***	***125 J***	***726 J***	***2670***
Nickel	100	1.7 J+	2 J+	2.2	2.4 B	2.7	2 J+	1	10.3 J+	3.1	14.2
Potassium	NE	5340	5420	8860	6470	9520 B	9190	8970	6270	7990	12700
Selenium	40	15.7	15.7	10	19.7	17.7	24.5	10.2	***71.6***	14.9	35.8
Silver	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	50000	24800	24900	***79100***	40700	***91400***	***82300***	***61900***	32800	38000	***55800***
Vanadium	86	5 U	1 JB	5 U	5 U	5 U	5 U	0.28 J	5 U	0.84 J	5 U
Zinc	2000	3.7	4.4	11	30.4	63.9	4.5	1.8 J	254	83.6	211
Chromium, hexavalent	0.035	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Cyanide, Total	1.5	5 U	5 U	5 U	5 U	5 U	***4.5 J***	***5***	5 U	***9.4***	***5.9***

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-1

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		MW-102.061218	MW-103.030618	MW-103.061218	MW-104.031418	MW-104.060718	MW-105.031318	MW-105.060518	MW-106.031318
COLLECTION DATE:		6/12/2018	3/6/2018	6/12/2018	3/14/2018	6/7/2018	3/13/2018	6/5/2018	3/13/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)									
Mercury	0.63	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aluminum	200	48.6	18.9 J	9.9 J	34.9	58.8	27.3	34.8	36.5
Antimony	6	2 U	3.3	0.93 J	0.27 J	2 U	3.3	3.2	1.4 J
Arsenic	0.052	***5.9***	***7.3***	***5.1***	***11.9***	***4.8***	***10.1***	***5.2 J***	***38.6***
Barium	2000	235	52.2	73.4	223	195	40.3	240	284
Beryllium	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	4	0.11 J	1 U	0.23 J	1 U	0.09 J	1	0.36 J	0.1 J
Calcium	NE	218000	38300	51700	135000	101000	161000	146000	246000
Chromium	70	0.65 J	2 U	0.52 J	1.4 J	1.7 J	4.1	4.6	3.1
Cobalt	6	0.93 J	1.4	1.8	0.61 J	0.39 J	***10.3***	4.4	***14***
Copper	800	2 U	2.7	4.8 B	2.7	3.2	23.3	10.3	1.5 J
Iron	300	***28900***	***944***	***409***	***14200***	***9810***	***13100***	***16200 J***	***16000***
Lead	5	***5.3***	4.5	***18.7***	***7.8***	***10.4***	***14.7***	***36.5***	***12.8***
Magnesium	NE	19700	25400	22100	19900	14600	16700	16900 J	101000
Manganese	50	***2520***	48.1	30.7	***1500 J***	***1160***	***702 J***	***594 J***	***1040 J***
Nickel	100	3.2	5	8.2	5.6 J	4.4	3.1 J+	3	19.1 J+
Potassium	NE	11200	11500	11300	9010	8800 B	14900	14000	26700
Selenium	40	18	7.4	6.6	37.2	13.7	32.1	12.8	***89***
Silver	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	50000	***81300***	***239000***	***123000***	***72900***	***59800***	***73000***	***69400***	***302000***
Vanadium	86	5 U	5 U	5 U	5 U	5 U	5 U	1 J	52.2 B
Zinc	2000	62.3	51.8	233	12.6	13.1	1450	386	7
Chromium, hexavalent	0.035	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Cyanide, Total	1.5	***4.4 J***	***3.5 J***	5 U	***4.7 J***	5 U	5 U	***4 J***	***7.8***

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-35

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		MW-106.060418	MW-107.030618	MW-107.060718	MW-108.030618	MW-108.060518	DUP-1.060518	MW-109.030918	DUP-1.030918
COLLECTION DATE:		6/4/2018	3/6/2018	6/7/2018	3/6/2018	6/5/2018	6/5/2018	3/9/2018	3/9/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)									
Mercury	0.63	0.2 U	0.13 J	0.2	0.094 J	0.2 U	0.2 U	0.092 J	0.075 J
Aluminum	200	130	47 B	54.9	114 B	50.4	67.9	116 B	150 B
Antimony	6	0.87 J	0.5 J	0.33 J	0.35 J	2 U	2 U	0.69 J	0.74 J
Arsenic	0.052	***28 J***	***10.1***	***6.7***	***6.8***	***5.4 J***	***5.6 J***	***9.7***	***9.2***
Barium	2000	397	494	447	253	258	285	245	240
Beryllium	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	4	1 U	0.13 J	0.17 J	0.13 J	0.099 J	0.12 J	0.2 J	0.16 J
Calcium	NE	268000	139000	129000	117000	119000	133000	102000	98200
Chromium	70	5.1	3.2 B	2.9	2 U	0.98 J	0.97 J	2 U	2.6 B
Cobalt	6	5.6	4.6	1.5	1.3	1.8	2	2.6	2.6
Copper	800	2.6	1.8 J	2 U	46.9	1.3 J	2.1	4.3	4
Iron	300	***31200 J***	***20100***	***15100***	***12100***	***9890 J***	***10900 J***	***20900***	***20400***
Lead	5	***26.5***	***36.4***	***39.2***	***15.4***	***6.1***	***7.1***	***20.7***	***21***
Magnesium	NE	102000 J	8970	8460	10400	8760 J	9720 J	8950	8680
Manganese	50	***1020 J***	***1280***	***1080***	***756***	***621 J***	***689 J***	***957***	***927***
Nickel	100	6.9	2.7	2.1	3.3	3	3.2	4.1	4.2
Potassium	NE	26100	10600	11800 B	7630	5900	6550	10400	10100
Selenium	40	***41.5***	26.4	18.6	20.3	12	13.1	18.2	17.5
Silver	40	1 U	1 U	1 U	1 U	1 U	1 U	0.031 J	0.032 J
Sodium	50000	***290000***	29600	26600	35000	25300	28000	***54900***	***52000***
Vanadium	86	79.4	5 U	5 U	5 U	1.1 J	1.2 J	12.8 B	12.4 B
Zinc	2000	31.4	28.9	28.9	59.2	19.6	22.2	54.3	50.7
Chromium, hexavalent	0.035	10 UJ	10 U	***7.8 J***	10 U	10 U	10 U	10 U	10 U
Cyanide, Total	1.5	***7.3***	***8***	5 U	***15.6***	***15.6***	***14.6***	***4.5 J***	***6.3***

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-6

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		MW-109.060518	MW-110.031418	MW-110.060718	MW-111.031418	MW-111.060718	MW-112.030918	MW-112.060718	MW-114.030818
COLLECTION DATE:		6/5/2018	3/14/2018	6/7/2018	3/14/2018	6/7/2018	3/9/2018	6/7/2018	3/8/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)									
Mercury	0.63	0.2 U	0.2 U	0.2 U	0.2 U	0.1 J	0.2 U	0.2 U	0.2 U
Aluminum	200	102	11.6 J	65.1	21.7	57.4	20 U	51.7	30.2 B
Antimony	6	2 U	2 U	2 U	2 U	2 U	0.33 J	0.32 J	2 U
Arsenic	0.052	***8 J***	***19***	***10.9***	***8.1***	***4.1***	***5.1***	***6.7***	***2***
Barium	2000	286	206	221	882	627	163	223	131
Beryllium	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	4	0.11 J	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	NE	98200	78900	59300	63900	51400	65000	74000	73100
Chromium	70	1.9 J	1.4 J	2.1	0.85 J	1.6 J	2 U	2.2	0.48 J
Cobalt	6	0.93 J	1.1	0.76 J	0.31 J	0.3 J	0.73 J	2.5	0.15 J
Copper	800	2.7	0.82 J	5.4	1.6 J	2.6	2.8	5.3	2 U
Iron	300	***28500 J***	***14700***	***16400***	***4230***	***2670***	***11900***	***10300***	***17800***
Lead	5	***14.6***	3.3	***6.6***	4.9	***10.7***	0.83 J	***8.2***	1 U
Magnesium	NE	9260 J	17200	13500	9440	7710	10200	10200	10000
Manganese	50	***878 J***	***1160 J***	***1150***	***1130 J***	***714***	***494***	***563***	***2310***
Nickel	100	1.9	5.5 J+	3.3	2.3 J+	1.4	2.3	4.5	1.6
Potassium	NE	8700	18300	15300 B	5150	4920 B	4410	5540 B	3190
Selenium	40	11.4	24.8	10.4	21.2	7.1	12.8	12.2	6.2
Silver	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	50000	***53600***	***134000***	***108000***	36800	36800	***95600***	***66700***	***162000***
Vanadium	86	4.4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	2000	30.1	200	97.7	18	36.5	37.1	49.2	1.7 J
Chromium, hexavalent	0.035	10 U	10 UJ	10 U	10 UJ	10 U	10 U	10 U	10 U
Cyanide, Total	1.5	***6.1***	5 U	5 U	***17.8***	***3.5 J***	***5.3***	5 U	5 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-37

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		MW-114.060618	MW-115.030918	MW-115.060618	MW-116.030818	MW-116.060618	MW-117.030818	MW-117.060618	MW-118.030818
COLLECTION DATE:		6/6/2018	3/9/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)									
Mercury	0.63	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 J
Aluminum	200	46.8	30.3 B	26.2	22.1 B	27.7	40.6 B	95.4	***2220 B***
Antimony	6	2 U	0.33 J	2 U	0.32 J	0.31 J	1.1 J	2 U	1.2 J
Arsenic	0.052	***1.6***	***5.2***	***2.6***	***21.7***	***16.2***	***8***	***5.2***	***14.2***
Barium	2000	139	105	324	***4910***	***4010***	86.3	203	580
Beryllium	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	***1.2***
Cadmium	4	1 U	1 U	1 U	1 U	1 U	0.18 J	1 U	0.59 J
Calcium	NE	84800	25700	45500	352000	265000	41700	62600	496000
Chromium	70	2 U	2 U	2 U	2 B(U)	1.4 J	3.4 B	1.8 J	38.4 B
Cobalt	6	0.18 J	4.8	2.7	1.5	0.94 J	0.51 J	0.5 J	***20.4***
Copper	800	2 U	1.4 J	2 U	2.2	2.6 J	13.3	2.1 J	9.8
Iron	300	***12400***	***5740***	***20200***	***90000***	***63600***	278	***2260***	***142000***
Lead	5	0.28 J	1 U	1 UJ	1.6	2 J	***8.9***	1.9 J	***568***
Magnesium	NE	12000	4890	12500	61500	51400	26900	55800	56100
Manganese	50	***1460***	***236***	***622***	***10500***	***6520***	***71.1***	***624***	***15800***
Nickel	100	1.6	12.2	4.2	5.1	4.2	2.4	3.2	21.3
Potassium	NE	3360 B	2300	4730 B	44500	40600 B	12400	22500 B	14500
Selenium	40	5.6 J	3.1 J	6.5 J	***79.8***	***55.4 J***	8.7	13 J	29.1
Silver	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.037 J
Sodium	50000	***160000***	25000	***117000***	***4000000***	***3970000***	***285000***	***613000***	***410000***
Vanadium	86	5 U	5 U	0.81 J	5 U	5 U	5 U	5 U	13.1 B
Zinc	2000	2 UJ	166	1.5 J	18.4	4.5 J	31.4	4.3 J	841
Chromium, hexavalent	0.035	10 UJ	10 U	10 UJ	10 U	10 UJ	10 U	10 UJ	10 U
Cyanide, Total	1.5	5 U	5 U	5 U	***9.2***	***5.8***	5 U	5 U	***4.5 J***

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 3-3

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		MW-118.061118	MW-119.030618	MW-119.060618	MW-120.030818	MW-120.060618	MW-121.030818	MW-121.060618	MW-122.030818
COLLECTION DATE:		6/11/2018	3/6/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
Metals (ug/l)									
Mercury	0.63	0.47	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aluminum	200	***1820***	96.9 B	111	80.2 B	55.1	53 B	45.8	20 U
Antimony	6	0.72 J	3.1	0.44 J	***6.8***	2.9	0.32 J	2 U	0.32 J
Arsenic	0.052	***7.3***	***2.2***	***6.2***	***10.1***	***7.3***	***7.2***	***5.3***	***8.5***
Barium	2000	494	219	1430	488	462	553	726	162
Beryllium	1	0.68 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	4	0.16 J	2.8	0.44 J	0.46 J	0.43 J	0.14 J	1 U	0.091 J
Calcium	NE	328000	26600	61200	111000	92500	81400	76200	62900
Chromium	70	32.3	2 U	2.5	2 J	0.99 J	3.9 B	4.4	2 J
Cobalt	6	3.1	0.84 J	0.25 J	1.8	1.1	0.26 J	0.22 J	0.87 J
Copper	800	10.7 B	18.7	11.8 J	6.5	3.5 J	1.4 J	2 U	2.7
Iron	300	***154000***	***1510***	***15300***	***14100***	***12200***	***12000***	***13500***	***18900***
Lead	5	***26***	***6.5***	***7.9 J***	***25.3***	***12.6 J***	4.2	2.6 J	***7***
Magnesium	NE	51800	16000	44600	28700	26100	34600	38400	12600
Manganese	50	***7240***	***81.7***	***192***	***490***	***638***	***476***	***395***	***2150***
Nickel	100	7.7	10.9	3.2	8.9	6.7	2.2	2.5	1.6
Potassium	NE	13900	6280	15000 B	8220	9060 B	12200	14200 B	3990
Selenium	40	21.8	6.8	14.8 J	22.5	15.7 J	21	15.9 J	11.2
Silver	40	0.083 J	0.25 J	0.052 J	0.06 J	1 U	1 U	1 U	1 U
Sodium	50000	***378000***	***198000***	***505000***	***240000***	***247000***	***328000***	***395000***	***82100***
Vanadium	86	10.4 B	5 U	0.83 J	5 U	5 U	5 U	5 U	5 U
Zinc	2000	65.5	470	42.3 J	349	220 J	6.1	3.9 J	4.6
Chromium, hexavalent	0.035	10 UJ	10 U	10 UJ	10 U	10 UJ	10 U	10 UJ	10 U
Cyanide, Total	1.5	5 U	***3.9 J***	***6.2***	***3.6 J***	5 U	***4.1 J***	5 U	5 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-30

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - METALS AND CYANIDE

SAMPLE ID:		MW-122.060618	MW-123.031218	MW-123.060518
COLLECTION DATE:		6/6/2018	3/12/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result
Metals (ug/l)				
Mercury	0.63	0.2 U	0.2 U	0.2 U
Aluminum	200	22.2	***240 B***	37
Antimony	6	2 U	2 U	2 U
Arsenic	0.052	***7.1***	***8.7***	***5.1 J***
Barium	2000	174	208	273
Beryllium	1	1 U	1 U	1 U
Cadmium	4	1 U	1 U	1 U
Calcium	NE	57100	216000	209000
Chromium	70	2 U	2 U	0.67 J
Cobalt	6	0.38 J	1.2	0.48 J
Copper	800	2 U	2 J	0.92 J
Iron	300	***17400***	***15000***	***13600 J***
Lead	5	3.6 J	1.2	1 U
Magnesium	NE	10900	16600	17300 J
Manganese	50	***1520***	***2730***	***2520 J***
Nickel	100	0.87 J	3.3	1.8
Potassium	NE	3460 B	11100	10600
Selenium	40	8.4 J	23.8	15
Silver	40	1 U	1 U	1 U
Sodium	50000	***55500***	***78900***	***96000***
Vanadium	86	5 U	5 U	0.77 J
Zinc	2000	4 J	14.7	1.6 J
Chromium, hexavalent	0.035	10 UJ	10 U	10 U
Cyanide, Total	1.5	5 U	***8.9***	5 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 4.0

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		E-1.031218	E-1.060518	E-2.031418	E-2.061218	DUP-2.061218	E-3.031318	E-3.060518	E-4.031418	E-4.061118	E-5.031318
COLLECTION DATE:		3/12/2018	6/5/2018	3/14/2018	6/12/2018	6/12/2018	3/13/2018	6/5/2018	3/14/2018	6/11/2018	3/13/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)											
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 4D

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		E-5.060518	E-6.031318	DUP-2.031318	E-6.061218	E-7.031318	E-7.060718	E-8.031418	E-8.060418	MW-101.031418	MW-101.060518
COLLECTION DATE:		6/5/2018	3/13/2018	3/13/2018	6/12/2018	3/13/2018	6/7/2018	3/14/2018	6/4/2018	3/14/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)											
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 4D

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		MW-102.030618	MW-102.061218	MW-103.030618	MW-103.061218	MW-104.031418	MW-104.060718	MW-105.031318	MW-105.060518
COLLECTION DATE:		3/6/2018	6/12/2018	3/6/2018	6/12/2018	3/14/2018	6/7/2018	3/13/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)									
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 4D

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		MW-106.031318	MW-106.060418	MW-107.030618	MW-107.060718	MW-108.030618	MW-108.060518	DUP-1.060518	MW-109.030918
COLLECTION DATE:		3/13/2018	6/4/2018	3/6/2018	6/7/2018	3/6/2018	6/5/2018	6/5/2018	3/9/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)									
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-10

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		DUP-1.030918	MW-109.060518	MW-110.031418	MW-110.060718	MW-111.031418	MW-111.060718	MW-112.030918	MW-112.060718
COLLECTION DATE:		3/9/2018	6/5/2018	3/14/2018	6/7/2018	3/14/2018	6/7/2018	3/9/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)									
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-45

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		MW-114.030818	MW-114.060618	MW-115.030918	MW-115.060618	MW-116.030818	MW-116.060618	MW-117.030818	MW-117.060618
COLLECTION DATE:		3/8/2018	6/6/2018	3/9/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)									
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 4-10

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		MW-118.030818	MW-118.061118	MW-119.030618	MW-119.060618	MW-120.030818	MW-120.060618	MW-121.030818	MW-121.060618
COLLECTION DATE:		3/8/2018	6/11/2018	3/6/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018
Lab Analyte	PAL	Result	Result	Result	Result	Result	Result	Result	Result
PCBs (ug/l)									
PCB-1260	0.0078	***0.016***	***0.024***	***0.018***	0.01 U	0.01 U	0.01 U	***0.0091 J***	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 4D

SUMMARY OF GROUNDWATER SAMPLE DETECTIONS - PCBs

SAMPLE ID:		MW-122.030818	MW-122.060618	MW-123.031218	MW-123.060518
COLLECTION DATE:		3/8/2018	6/6/2018	3/12/2018	6/5/2018
Lab Analyte	PAL	Result	Result	Result	Result
PCBs (ug/l)					
PCB-1260	0.0078	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

TABLE 7-48

SUMMARY OF SUMP SAMPLE DETECTIONS - VOCs

SAMPLE ID:		LOT 1 BLDG 2 SUMP.031418	LOT 1 BLDG 3 SUMP.031418	LOT66 BLDG17 - SUMP1.060718	LOT66 BLDG17 - SUMP2.060718
COLLECTION DATE:		3/14/2018	3/14/2018	6/7/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result
VOCs (ug/l)					
Acetone	6000	6 U	14	17 B	6 U
Benzene	0.46	0.2 U	0.031 J	0.2 U	0.091 J
Carbon disulfide	700	0.3 U	0.12 J	0.3 U	0.3 U
Chlorobenzene	50	0.2 U	0.2 U	0.2 U	0.79
Chloroform	0.22	***3.6***	0.2 U	0.037 J	0.2 U
Isopropylbenzene	450	0.19 J	1 U	1 U	1 U
Ethylbenzene	1.5	0.2 U	0.12 J	0.2 U	0.2 U
2-Hexanone	38	3 U	1.5 J	3 U	3 U
4-Methyl-2-pentanone	6300	5 U	2.1 J	5 U	5 U
Methyl tert-butyl ether	14	0.15 J	0.3 U	0.3 U	0.3 U
Styrene	100	0.5 U	0.21 J	0.5 U	0.5 U
Tetrachloroethene	1	0.18 J	0.5 U	0.5 U	0.5 U
Toluene	600	0.2 U	0.31	0.2 U	0.11 J
1,2,4-Trichlorobenzene	1.2	0.075 J	0.3 U	0.3 U	0.11 J
1,1,1-Trichloroethane	30	0.03 J	0.2 U	0.2 U	0.2 U
m,p-Xylene	190	0.5 U	0.5 U	0.5 U	0.21 J
o-Xylene	190	0.5 U	0.17 J	0.5 U	0.23 J

Notes:

PAL - Project Action Limit

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 7-49

SUMMARY OF SUMP SAMPLE DETECTIONS - SVOCs

SAMPLE ID:		LOT 1 BLDG 2 SUMP.031418	LOT 1 BLDG 3 SUMP.031418	LOT66 BLDG17 - SUMP1.060718	LOT66 BLDG17 - SUMP2.060718
COLLECTION DATE:		3/14/2018	3/14/2018	6/7/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result
SVOCs (ug/l)					
1,4-Dioxane	0.4	0.087 J	0.21 J	0.18 J	*1.1*
Acenaphthylene	NE	0.1 U	0.013 J	0.1 U	0.1 U
Anthracene	1800	0.0066 J	0.099 U	0.0044 J	0.01 J
Benzo(a)anthracene	0.03	0.0066 J	*0.17*	0.1 U	0.1 U
Benzo(a)pyrene	0.025	0.1 U	*0.034 J*	0.1 U	0.1 U
Benzo(b)fluoranthene	0.2	0.011 J	0.086 J	0.1 U	0.1 U
Benzo(g,h,i)perylene	NE	0.0091 J	0.21	0.011 J	0.1 U
Benzo(k)fluoranthene	0.5	0.01 J	0.037 J	0.1 U	0.1 U
Chrysene	5	0.0087 J	0.21	0.1 U	0.1 U
Fluoranthene	300	0.014 J	0.23	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	0.2	0.0081 J	*0.22*	0.1 U	0.1 U
2-Methylnaphthalene	30	0.016 J	0.045 J	0.1 U	0.1 U
Naphthalene	0.17	0.015 J	0.037 J	0.1 U	0.1 U
Pentachlorophenol	0.041	0.2 U	*1.2*	0.2 UJ	0.2 UJ
Phenanthrene	NE	0.013 J	0.2	0.1 U	0.1 U
Pyrene	120	0.1 U	0.23	0.1 U	0.0054 J
Acetophenone	700	10 U	0.57 J	10 U	10 U
Bis(2-ethylhexyl)phthalate	3	5 U	*29*	5.1 U	5.1 U
4-Methylphenol	50	10 U	12	10 U	10 U
Di-n-butylphthalate	700	5 U	2.2 J	5.1 U	5.1 U
Diethylphthalate	6000	0.38 J	5.2 B	5.1 U	5.1 U
Phenol	2000	10 U	3 J	10 U	10 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

TABLE 7-50

SUMMARY OF SUMP SAMPLE DETECTIONS - METALS

SAMPLE ID:		LOT 1 BLDG 2 SUMP.031418	LOT 1 BLDG 3 SUMP.031418	LOT66 BLDG17 - SUMP1.060718	LOT66 BLDG17 - SUMP2.060718
COLLECTION DATE:		3/14/2018	3/14/2018	6/7/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result
Metals (ug/l)					
Mercury	0.63	0.2 U	0.18 J	0.081 J	0.12 J
Aluminum	200	7.3 J	***314***	43.6	38.7
Antimony	6	2 U	3.2	1.4 J	1.5 J
Arsenic	0.052	***4.2***	***10.8***	***11.4***	***6.6***
Barium	2000	178	131	31.6	40.1
Cadmium	4	0.088 J	0.76 J	0.44 J	0.9 J
Calcium	NE	180000	292000	37100	191000
Chromium	70	2 J	10.8	3.3	7.1
Cobalt	6	0.21 J	***8.4***	1.2	6
Copper	800	2.1	20.5	34.5	75
Iron	300	52.7 J	***7660***	144 J	***690***
Lead	5	1.2	***52.1***	2.3	3.4
Magnesium	NE	21200	4410	1940	4030
Manganese	50	4.4 J	***232 J***	14.4	***160***
Nickel	100	2.3 J+	12.8 J+	17.2	***237***
Potassium	NE	2600	8590	5470 B	19200 B
Selenium	40	14.6	36.8	3.1 J	17.2
Silver	40	1 U	1 U	0.039 J	0.036 J
Sodium	50000	***137000***	15200	24200	***98600***
Vanadium	86	5 U	5 U	2.9 J	5 U
Zinc	2000	6.4	779	132	156
Chromium, hexavalent	0.035	10 UJ	10 UJ	10 U	10 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

B - compound detected in a blank

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

J+ - The result is an estimated quantity, and the result may be biased high.

TABLE 7-50

SUMMARY OF SUMP SAMPLE DETECTIONS - PCBs

SAMPLE ID:		LOT 1 BLDG 2 SUMP.031418	LOT 1 BLDG 3 SUMP.031418	LOT66 BLDG17 - SUMP1.060718	LOT66 BLDG17 - SUMP2.060718
COLLECTION DATE:		3/14/2018	3/14/2018	6/7/2018	6/7/2018
Lab Analyte	PAL	Result	Result	Result	Result
PCBs (ug/l)					
PCB-1254	0.0078	0.01 U	***0.056***	0.01 U	0.01 U
PCB-1260	0.0078	***0.028***	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result exceeds PAL

Method Detection Limit exceeds PAL

Data Qualifiers

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

TABLE 8-1
BULKHEAD WALL PIPE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Location No.	Lot	Opinion of Pipe Origin	Depth from Wall Top/Elevation	Pipe Diameter / Material	Wall Material	Liquids/ Seepage	Pipe Condition/Notes	Comments
PVSC 7	66	PVSC 7 (obsolete line plugged)	2-2.5' (estimated)/4.7-5.2' MSL at high water mark	6" / Metal	steel sheet pile	None	Good condition, no visible damage, some rust present	Location is consistent with 1971 PVSC field notes labeled "7." The pipe appears to trace to Building #17; however, there is no indication inside Building #17 of the wall pipe (PVSC 7).
P63-1	63	The origin and installation date are unknown	2.5-3' (estimated)/5.2- 4.7' MSL at high water mark	4" / Metal	deteriorated vertical wood piles	None	Mangled and surrounded by vegetation but pipe intact Some rust present	Pipe is too high for gravity drainage from basements of Buildings #7 or #12. Aligns with roof drain header pipe (Anomaly G) south of Building #12. 1942-58 Facility Drawing indicates wood cover over portion of utility chase between Buildings #17 and #12. Pipe is possible drain for precipitation entering utility chase through wood cover.
P63-2	63	The origin and installation date are unknown	4'/2.9' MSL between high water mark and mudline	6" / Metal	deteriorated vertical wood piles	None	Rusty but intact, surface appearance resembles tree bark, some dirt accumulation Surrounded by vegetation along bulkhead	Sonde pushed 45 feet from wall to refusal, but not able to confirm inside Building #7. Inferred 14 feet inside Building #7. Above-floor roof drain pipes in Building #7 are metal. All open roof drain pipe cleanouts on the first floor of Building #7 are plugged. Attempts to snake the roof drains from second floor unsuccessful. Pipe aligns with roof drains in middle of Building #7; pipe at wall is at higher elevation than Building #7 basement.
P63-3	63	The origin and installation date are unknown	3.67'/3.43' MSL between high water mark and mudline	6" / Metal	deteriorated vertical wood piles	None	Broken with jagged edges, rusty, hidden by vegetation and debris	Pushed sonde to refusal at 17 feet toward the open-topped concrete pipe vault near the fire escape at northeast corner of Building #7. Signal interference from metal near northeast corner of the Building #7 (surface pipes and metal fire escape). No indication inside building of this pipe. Pipe at wall is at higher elevation than Buildings #7 and #12 basements.
P63-4	63	The origin and installation date are unknown	2.33'/4.77' MSL at high water mark	3" / Metal	deteriorated vertical wood piles	None	Good condition, very visible (extruding from the bulkhead)	Pushed sonde to refusal at 39 feet. Pipe goes west from wall and turns into northeast corner of Building # 7. No roof drain observed in northeast corner of Building #7. Signal interference near northeast corner of Building #7 near fenced former transformer location due to metal (fence, surface pipes, and fire escape). Pipe at wall is higher than Building #12 basement floor indicating could not gravity drain tanks in Building #12 (assuming tank drain at tank bottom). Pipe at wall is higher than Building #7 basement floor. No evidence of this pipe in Building #7. Connects to Anomaly N.
P63-5	63	The origin and installation date are unknown	3'/4' MSL (estimated from P63-4) between high water mark and mudline	4" PVC inside 5" Terra Cotta	deteriorated vertical wood piles	None	End is capped (white PVC endcap) at approximately 12" inland from wall	Removed 4-inch PVC end cap from length of PVC pipe apparently pushed inside terra cotta pipe (visible terra cotta is split, presumably by insertion of PVC inside the terra cotta pipe) and pushed sonde to refusal at approximately 15 feet toward fire escape/pipe vault. No roof drain observed in northeast corner Building #7. Pipe at wall is at higher elevation than Building #7 basement floor. USEPA documents indicate that the pipe associated with 2009 mystery oil spill was capped. 2009 oil spill pipe reportedly travels through Manhole 4 near northwest corner of Building #7 loading dock.
P63-6	63	The origin and installation date are unknown	1.33'/5.87' MSL just above high water mark	3" / Metal	deteriorated vertical wood piles	None	Good condition extending from bulkhead	Goes below fenced former transformer area and bears northwest to terminate approximately 40 feet north of Manhole 2. Pushed sonde to refusal at 85 feet and traced to approximately 30 feet north of northwest corner of Building #7 to former AST area. Pipe connects to Anomaly K (Building #9A and former Building #5) in former AST area.
PVSC 6	64	PVSC 6 - 7" (jacket cooling water pipe)	1.33'/5.9 MSL at high water mark	7" - 8" / Fluted metal	steel sheet pile	None	Rusty but in good condition	Location is consistent with 1971 PVSC field notes labeled "6." Pushed sonde to refusal at 8 feet. Energized pipe and traced to approximately 25 feet west of bulkhead wall. No associated pipe observed in Buildings #6 or #7. Pipe is approximately 15 feet north of start of steel wall; some vegetation removed from pipe end. PVSC lists source as jacket cooling water pipe.
PVSC 5	61	PVSC 5 (9" x 10" pipe plugged; PVSC note does not provide additional information)	4'/3' MSL between high water mark and mudline	9" x 10" Rectangular Concrete Plug (pipe not visible)	steel sheet pile	None	No pipe observed	Location is consistent with 1971 PVSC field notes labeled "5." No pipe observed fitting this description or at the PVSC diagram location - possibly associated with a buried anomaly (Anomaly S) approximately 15 feet long between the bulkhead wall and Building #6, terminating approximately 10 feet west of the bulkhead wall.
P61-1	61	The origin and installation date are unknown	2.25'/5.15' MSL at high water mark	4" / Metal	steel sheet pile	None	Good condition	Pushed sonde to refusal at approximately 11 feet. Energized and traced to alley to the west of Building #6. Possible connection to other pipe running north-south in alley.
PVSC 4	61	PVSC 4 (4" pipe containing cooling water from air compressor and after cooler)	4.67'/2.73' MSL between high water mark and mudline	4" / Concrete Hole with Metal Inside	steel sheet pile	None	Good condition	Location is consistent with 1971 PVSC field notes labeled "4." Pushed sonde to refusal at approximately 10 feet. Energized and traced to interior of Building #6; 2 turns in pipe near termination at center of Building #6. No evidence of pipe in Building #6. PVSC lists origin as cooling water from air compressor and after cooler.
P61-3	61	The origin and installation date are unknown	2.33'/5.07' MSL at high water mark	5" / Metal	steel sheet pile	None	Good condition	Pushed sonde to refusal at approximately 15 feet. Energized pipe and traced to east wall of Building #6. Not detected inside and no evidence of pipe in Building #6. Vegetation removed from pipe end.

TABLE 8-1
BULKHEAD WALL PIPE SUMMARY
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Location No.	Lot	Opinion of Pipe Origin	Depth from Wall Top/Elevation	Pipe Diameter / Material	Wall Material	Liquids/ Seepage	Pipe Condition/Notes	Comments
PVSC 3	61	PVSC 3 (4" pipe which contains cooling water from air compressor and after cooler)	4.33'/2.57' MSL between high water mark and mudline	4" / Metal	steel sheet pile	None	Pipe appears to be deteriorated	Location is consistent with 1971 PVSC field notes and labeled "3." Pushed sonde to refusal at approximately 45 feet and traced to east wall of Building #6. Weak signal inside Building #6 terminating at east wall. No evidence of pipe in Building #6. PVSC lists origin as cooling water from air compressor and after cooler.
P61-5	61	Roof drain	3.17'/3.53' MSL between high water mark and mudline	5" / Metal	steel sheet pile	None	Pipe appears to be deteriorated	Pushed sonde to refusal at 25 feet. Appears to connect to former roof drain at northeast corner of Building #6 adjacent to water supply pipe. Appears to end near water supply pipe.
PVSC 2	61	PVSC 2 (10" drain line from water tank on Building #10)	6.7'/0 MSL at mudline	8" / Terra Cotta	steel sheet pile	None	Good condition	Location is consistent with 1971 PVSC field notes and labeled "2." Pushed sonde to refusal at 10 feet. Unable to trace more than approximately 10 feet toward Building #6. Historical maps and Phase 1 observations have water tank on Building #10. No evidence of pipe in Buildings #6 or #10. Vegetation removed from pipe end.
PVSC 1	60	PVSC 1 (opening in bulkhead, storm drain) (no diameter listed)	6.5'/0.2' MSL at mudline	6" / Metal	steel sheet pile	None	Good condition	At Lots 60/61 boundary bearing toward alley between Buildings #1 and #6; location is consistent with 1971 PVSC field notes and labeled "1." PVSC notes list origin as opening in bulkhead, storm drain. Pushed sonde to refusal at 8 feet. Energized but unable to trace. May be broken or change to non-ferrous. Steel wall is irregular cut at pipe, and end of pipe is set back approximately 5 inches from wall opening making it difficult to see pipe from the wall top.
P57-1	57	Drain for former water tank on Building #10	6.7'/0' MSL at mudline	8" / Metal	concrete	Yes	Good condition, deep pipe	Pipe is mostly submerged below the mudline. During low tide, the drainage pattern is visible in the mud flat. Pipe is at sediment surface. Pushed sonde to refusal at 78 feet with weak signal in Building #10 basement under wall that separates office area from holding/treatment tank area toward elevator shaft (not accessible). No odor on retracted sonde. Inferred that pipe extends at least 50 feet under Building #10. Energized pipe produced weak signal in same area as sonde. Unable to trace signal inside Building #10 or along building perimeter. The drain for the water tank is on the roof of Building #10. Flow could be from leaking water or sewer pipes, drainage as the water level recedes from high to low tide, or a combination of these possible flows.
P70-1	70	Catch basin storm drain	0.83'/5.67' MSL above high water mark	6" / Plastic	deteriorated vertical wood piles	None	Broken/jagged edges, surrounded by vegetation	No actual top of bulkhead to measure from; plastic pipe depth is approximate. Traced via sonde to catch basin.
P70-2	70	The origin and installation date are unknown	1.92'/4.58' MSL just below high water mark	5" / Metal	deteriorated vertical wood piles	None	Good condition, surrounded by vegetation	No actual top of bulkhead to measure from; pipe depth is approximate. Pushed sonde to refusal at 3 feet. Energized and traced just inside (less than 1' north of man door threshold) at southeast corner of Building #16. No evidence of the pipe in Building #16. All roof drains from Building #16 originally drained to ground surface via interior pipes with penetrations at the base of the walls to the exterior. Interior roof drains have been abandoned.
P70-3	70	The origin and installation date are unknown	5.33'/0.37' MSL just above mudline	12" / Terra Cotta	deteriorated vertical wood piles	None	Good condition with jagged edges at pipe opening Easily broken - believed to be terra cotta	No actual top of bulkhead to measure from; pipe depth is approximate. Sonde pushed to refusal approximately 50 feet near west boundary of Lot 70. Historic map shows the area to the east of Buildings #13 and #14 as a low lying area being filled in. The south border of the area designated as being filled roughly corresponds to the alignment of the pipe; it is not known when the pipe was installed. Pipe may be associated with drainage of the former (pre-filled) low lying area.
P69-1	69	Boiler drain	0.33'/5.77' MSL above high water mark	4" / Plastic	deteriorated vertical wood piles	None	Good condition with minor breakage at the edges	No actual top of bulkhead to measure from; pipe depth is approximate. Anomaly HH, corner of Building #19. Boiler is housed in enclosure at northeast corner of Building, approximately 5 feet from pipe inlet. PVC pipe terminates inland at approximately 2 feet north of northeast corner Building #19 flush with ground surface. Not a roof drain. No owner knowledge. Based on pipe material (PVC), this pipe is suspected to have been installed within the last 35 years.

Notes:
Geophysical investigations occurred in September 2017, November 2017, and June 2018.
Elevation Basement Building #7 - 1.7 MSL
Elevation Basement Building #12 - 4.8 MSL
Elevation Basement Building #17 - 3.65 MSL
No paint or coating stains in pipes

Lot	Wall Components
67	soil/debris bank, vegetation, collapsed, no wall structure observed
68 (B#17)	steel
63 (B#7)	wood, collapsed in places
64	wood to steel
61 (B#6)	steel
60 (B#1)	wood to concrete
57 (B#10)	concrete
70	soil/debris bank, vegetation, collapsed, no wall structure observed
69	soil/debris bank, vegetation, collapsed, no wall structure observed

TABLE TOT-5

VAPOR INTRUSION SCREENING OF GROUNDWATER SAMPLES - RESIDENTIAL

SAMPLE ID:		USEPA Residential		E-1.031218	E-1.060518	E-2.031418	E-2.061218	DUP-2.061218	E-3.031318	E-3.060518	E-4.031418	E-4.061118	E-5.031318	E-5.060518	E-6.031318	DUP-2.031318
COLLECTION DATE:	NJDEP Groundwater	Target GW Conc.		3/12/2018	6/5/2018	3/14/2018	6/12/2018	6/12/2018	3/13/2018	6/5/2018	3/14/2018	6/11/2018	3/13/2018	6/5/2018	3/13/2018	3/13/2018
Lab Analyte	VI Screening Level	TCR=1E-06	THQ=0.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)																
1,1,1-Trichloroethane	13,000	--	742	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	6	3.23	--	0.39	0.56	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	3700	--	24.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	8	5.18	0.619	0.26	0.2 U	0.2 U	0.2 U	0.2 U	4	3.4	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	50	7.64	--	0.054 J	0.078 J	0.025 J	0.06 J	0.053 J	0.2 U	0.2 U	0.18 J	0.11 J	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	260	--	19.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	130	--	3.59	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dibromo-3-Chloropropane	--	0.0281	3.47	2 U	2 U	2 U	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	6800	--	266	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	4	6.59	3.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	75	2.59	846	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Butanone	2,500,000	--	224,000	5 J	4.6 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	--	--	821	1.4 J	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 UJ	3 U	3 U	3 U	3 U
4-Methyl-2-pentanone	900,000	--	55,500	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	21,000,000	--	2,250,000	21	48	6 U	34	34	240	4.1 J	4.1 J	30 J	56	8.9	31	37
Benzene	20	1.59	13.8	0.2 U	0.2 U	0.078 J	0.14 J	0.14 J	0.42	0.25	0.043 J	0.049 J	0.036 J	0.047 J	0.2 U	0.2 U
Carbon disulfide	1500	--	124	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	1	0.415	9.22	0.2 U	0.037 J	0.2 U	0.2 U	0.2 U	0.2 U	0.037 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	770	--	41	0.3	0.19 J	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.05 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	26,000	--	2300	0.23 J	0.23 J	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	70	0.814	68.1	0.2 U	0.2 U	0.088 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cyclohexane	16,000	--	102	3 U	3 U	3 U	3 U	3 U	2 J	2 J	0.77 J	3 U	0.74 J	3 U	3 U	3 U
Ethylbenzene	700	3.49	324	0.2 U	0.2 U	0.11 J	0.2 U	0.2 U	0.079 J	0.077 J	0.15 J	0.2 U	0.2 U	0.2 U	0.2 U	0.14 J
Isopropylbenzene	--	--	88.7	1.6	1 U	0.22 J	1 U	1 U	14	27	0.93 J	0.36 J	3	3.3	1 U	0.19 J
m,p-Xylene	8600	--	355	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.34 J	0.26 J	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	580	450	13,000	0.69	0.37	0.3 U	0.3 U	0.3 U	0.14 J	0.17 J	0.19 J	0.3 U	0.24 J	0.16 J	0.17 J	0.18 J
Methylene Chloride	920	780	471	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
o-Xylene	8600	--	49.2	0.5 U	0.2 J	0.17 J	0.5 U	0.5 U	0.48 J	0.65	0.4 J	0.5 U	0.5 U	0.15 J	0.5 U	0.13 J
Styrene	180,000	--	928	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	31	14.9	5.76	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.085 J	0.089 J	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	330,000	--	1920	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.098 J	0.13 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	2	1.18	0.518	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	1	0.147	9.10	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U	0.02 U
SVOCs (ug/l)																
1,1-Biphenyl	--	--	3.31	4.9 U	4.9 U	4.9 U	5 U	5 U	4.9 U	9.7 U	5 U	5 U	4.9 U	4.8 U	4.9 U	4.9 U
1,4-Dioxane	--	2860	15900	3.2	3.5	0.51 J	0.51	0.45	0.19 J	0.19 J	0.85 J	0.71	0.087 J	0.077 J	2 U	0.2 UJ
Benzo(a)anthracene	--	34.4	--	0.0055 J	0.0061 J	0.088 J	0.014 J	0.013 J	0.49 U	1.9 U	0.099 U	0.5 U	0.016 J	0.48 U	0.0057 J	0.0047 J
Naphthalene	300	4.59	17.4	0.023 J	0.023 J	0.019 J	0.099 U	0.099 U	1.8	0.65 J	0.091 J	0.5 U	0.12 J	0.028 J	0.0051 J	0.0068 J
PCBs (ug/l)																
PCB-1260	--	0.358	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result corresponds to TCR > 1E-6 (yellow, italics)

Detected result corresponds to THQ > 0.1 (blue, underline)

Detected result corresponds to TCR > 1E-6 and THQ > 0.1 (green, bold)

Data Qualifiers

B - compound detected in a blank

D - Result is from a diluted sample

U - The analyte was analyzed for, but was not detected. The associated numerical value is the sample method detection limit.

J - The analyte was detected but the associated reported concentration is approximate and is considered estimated.

UJ - The analyte was analyzed for, but was not detected. However, due to quality control results that did not meet acceptance criteria, the quantitation limit is uncertain and may not accurately represent the actual limit.

TABLE NO. 5

VAPOR INTRUSION SCREENING OF GROUNDWATER SAMPLES - RESIDENTIAL

SAMPLE ID:		USEPA Residential		E-6.061218	E-7.031318	E-7.060718	E-8.031418	E-8.060418	MW-101.031418	MW-101.060518	MW-102.030618	MW-102.061218	MW-103.030618	MW-103.061218
COLLECTION DATE:	NJDEP Groundwater	Target GW Conc.		6/12/2018	3/13/2018	6/7/2018	3/14/2018	6/4/2018	3/14/2018	6/5/2018	3/6/2018	6/12/2018	3/6/2018	6/12/2018
Lab Analyte	VI Screening Level	TCR=1E-06	THQ=0.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)														
1,1,1-Trichloroethane	13,000	--	742	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.029 J	0.2 U	0.2 U	0.2	0.2 U
1,1,2,2-Tetrachloroethane	6	3.23	--	0.2 U	0.2 U	0.2 U	0.43	0.52	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	3700	--	24.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.1 J
1,1,2-Trichloroethane	8	5.18	0.619	0.2 U	0.2 U	0.2 U	4.2	**5.8**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	50	7.64	--	0.03 J	0.2 U	0.2 U	0.093 J	0.13 J	0.039 J	0.11 J	0.054 J	0.088 J	0.54	0.56
1,1-Dichloroethene	260	--	19.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	130	--	3.59	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dibromo-3-Chloropropane	--	0.0281	3.47	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 UJ
1,2-Dichlorobenzene	6800	--	296	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	4	6.59	3.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	75	2.59	846	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Butanone	2,500,000	--	224,000	10 U	10 U	10 U	10 U	10 U	10 U	7.5 J	10 U	4.6 J	10 U	10 U
2-Hexanone	--	--	821	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Methyl-2-pentanone	900,000	--	55,500	5 U	5 U	5 U	1.7 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	21,000,000	--	2,250,000	55	6 U	80 B	11	6 U	6 U	7.3	36	63	6 U	24
Benzene	20	1.59	13.8	0.2 U	0.2 U	0.2 U	0.2 U	0.046 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.03 J
Carbon disulfide	1500	--	124	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	1	0.415	9.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	770	--	41	0.2 U	0.2 U	0.2 U	0.054 J	0.2 U	0.2 U	0.1 J	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	26,000	--	2300	0.5 UJ	0.5 U	0.5 U	0.5 U	0.26 J	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 UJ
Chloroform	70	0.814	68.1	0.14 J	*1.2*	*1.2*	0.2 U	0.2 U	0.034 J	0.2 U	0.2 U	0.2 U	0.044 J	0.2 U
Cyclohexane	16,000	--	102	3 U	3 U	3 U	1.9 J	1.7 J	3 U	3 U	3 U	3 U	3 U	3 U
Ethylbenzene	700	3.49	324	0.2 U	0.2 U	0.2 U	0.12 J	0.18 J	0.12 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene	--	--	88.7	1 U	1 U	1 U	0.2 J	1 U	0.26 J	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	8600	--	35.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	580	450	13,000	0.11 J	0.092 J	0.3 U	0.3	0.2 J	0.3 U	0.3 U	0.25 J	0.49	0.3 U	0.3 U
Methylene Chloride	920	760	471	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
o-Xylene	8600	--	49.2	0.5 U	0.5 U	0.5 U	0.32 J	0.28 J	0.17 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	180,000	--	928	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	31	14.9	5.76	0.5 U	0.5 U	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.098 J
Toluene	330,000	--	1920	0.2 U	0.2 U	0.2 U	0.2 U	0.056 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	2	1.18	0.518	0.11 J	0.2 U	0.1 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.13 J
Vinyl chloride	1	0.147	9.10	0.02 UJ	0.02 U	0.02 U	0.057	0.078	0.02 U	0.071	0.02 U	0.02 UJ	0.02 U	0.02 UJ
SVOCs (ug/l)														
1,1-Biphenyl	--	--	3.31	5.1 UJ	5.1 U	5.1 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.8 U	5 UJ
1,4-Dioxane	--	2860	15900	0.17 J	0.078 J	0.2 U	1.2 J	0.96	0.18 J	0.14 J	2.3	5.9	0.86	1.4
Benzo(a)anthracene	--	34.4	--	0.019 J	0.0036 J	0.1 U	0.098 U	0.2 U	0.098 U	0.098 U	0.049 J	0.012 J	0.033 J	0.1 UJ
Naphthalene	300	4.59	17.4	0.1 UJ	0.1 U	0.1 U	0.016 J	0.016 J	0.098 U	0.0055 J	0.064 J	0.098 U	0.012 J	0.1 UJ
PCBs (ug/l)														
PCB-1260	--	0.358	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result corresponds to TCR > 1E-6 (yellow, italics)

Detected result corresponds to THQ > 0.1 (blue, underline)

Detected result corresponds to TCR > 1E-6 and THQ > 0.1 (green, bold)

TABLE 10-5

VAPOR INTRUSION SCREENING OF GROUNDWATER SAMPLES - RESIDENTIAL

SAMPLE ID:		USEPA Residential		MW-104.031418	MW-104.060718	MW-105.031318	MW-105.060518	MW-106.031318	MW-106.060418	MW-107.030618	MW-107.060718	MW-108.030618	MW-108.060518
COLLECTION DATE:	NJDEP Groundwater	Target GW Conc.		3/14/2018	6/7/2018	3/13/2018	6/5/2018	3/13/2018	6/4/2018	3/6/2018	6/7/2018	3/6/2018	6/5/2018
Lab Analyte	VI Screening Level	TCR=1E-06	THQ=0.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
1,1,1-Trichloroethane	13,000	--	742	0.2 U	0.2 U	0.2 U	0.2 U	4.5	1.1	0.2 U	0.2 U	0.2 U	0.035 J
1,1,2,2-Tetrachloroethane	6	3.23	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	3700	--	24.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	8	5.18	0.619	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.64	0.2 U	0.26	0.2 U	3.9
1,1-Dichloroethane	50	7.64	--	0.039 J	0.064 J	0.2 U	0.2 U	1.3	0.73	1.5	1.1	0.087 J	0.088 J
1,1-Dichloroethene	260	--	19.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.62	0.65	0.2 U	0.2 U
1,2,4-Trichlorobenzene	130	--	3.59	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dibromo-3-Chloropropane	--	0.0281	3.47	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	6800	--	266	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.55	0.77	1.2	0.66
1,2-Dichloropropane	4	6.59	3.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.088 J	0.063 J	0.2 U	0.2 U
1,4-Dichlorobenzene	75	2.59	846	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.31	0.3 U	0.3 U	0.3 U	0.5
2-Butanone	2,500,000	--	224,000	10 U	10 U	10 U	10 U	200	10 U	3.1 J	10 U	10 U	10 U
2-Hexanone	--	--	821	3 U	3 U	3 U	3 U	35	35	3 U	2 J	3 U	3 U
4-Methyl-2-pentanone	900,000	--	55,500	5 U	5 U	5 U	5 U	54	4.3 J	2.6 J	5 U	5 U	1.7 J
Acetone	21,000,000	--	2,250,000	14	220 B	29	140	140	6 U	44	250 B	83	6
Benzene	20	1.59	13.8	0.2	0.21	0.54	0.75	**89 J**	**82 D**	**46**	**33**	**14**	*10*
Carbon disulfide	1500	--	124	0.3 U	0.3 U	0.3 U	0.3 U	0.18 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	1	0.415	9.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	770	--	41	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	23 J	0.2 U	0.2 U	2.7	1.3
Chloroethane	26,000	--	2300	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Chloroform	70	0.814	68.1	0.048 J	0.2 U	0.2 U	0.2 U	0.064 J	0.2 U	0.2 U	0.2 U	0.2 U	0.063 J
Cyclohexane	16,000	--	102	3 U	3 U	3 U	3 U	3.3	2.2 J	2.7 J	1.8 J	17	7.4
Ethylbenzene	700	3.49	324	1.5 B	2.2 B	0.1 J	0.09 J	**880 BD**	**500 D**	*14 B*	*24 B*	*28 B*	*14*
Isopropylbenzene	--	--	88.7	1.2	1.6	1.6	1.3	210 JD	48	18	17	120	80 D
m,p-Xylene	8600	--	35.5	0.46 J	0.38 J	0.5 U	0.14 J	4000 D	1900 D	220	270 D	21 B	8.2
Methyl tert-butyl ether	580	450	13,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.13 J	0.3 U	0.3 U	0.3 U
Methylene Chloride	920	760	471	5 U	5 U	5 U	5 U	9.2	5 U	5 U	5 U	5 U	5 U
o-Xylene	8600	--	49.2	0.19 J	0.5 U	0.21 J	0.23 J	360 JBD	170 D	28 B	47 D	19 B	12
Styrene	180,000	--	928	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	31	14.9	5.76	0.5 U	0.5 U	0.5 U	0.5 U	3.5	1.6	0.22 J	0.3 J	0.11 J	0.1 J
Toluene	330,000	--	1920	0.053 J	0.2 U	0.054 J	0.068 J	59 J	12	22	10	0.79	0.47
Trichloroethene	2	1.18	0.518	0.2 U	0.2 U	0.079 J	0.1 J	**35**	**11**	0.55	0.59	0.2 U	0.2 U
Vinyl chloride	1	0.147	9.10	0.02 U	0.02 U	0.02 U	0.02 U	*0.92*	*1.1*	0.13	0.02 U	*0.15*	0.095
SVOCs (ug/l)													
1,1-Biphenyl	--	--	3.31	32	100 D	4.9 U	4.8 U	17 J	39 J	4.9 U	52 U	5 U	48 U
1,4-Dioxane	--	2860	15900	0.48 J	0.38	0.2 UJ	0.2 U	16 D	1.3	0.1 J	0.2 U	0.81	0.51
Benzo(a)anthracene	--	34.4	--	0.052 J	0.11 J	0.0053 J	0.19 U	2 U	9.6 U	0.98 U	10 U	0.076 J	1.9 U
Naphthalene	300	4.59	17.4	0.14	0.23 J	0.15	0.15 J	**59 D**	**74**	1.5 D	*5.1 J*	*16*	*8.9*
PCBs (ug/l)													
PCB-1260	--	0.358	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result corresponds to TCR > 1E-6 (yellow, italics)

Detected result corresponds to THQ > 0.1 (blue, underline)

Detected result corresponds to TCR > 1E-6 and THQ > 0.1 (green, bold)

TABLE TOT-1

VAPOR INTRUSION SCREENING OF GROUNDWATER SAMPLES - RESIDENTIAL

SAMPLE ID:		USEPA Residential		DUP-1.060518	MW-109.030918	DUP-1.030918	MW-109.060518	MW-110.031418	MW-110.060718	MW-111.031418	MW-111.060718	MW-112.030918	MW-112.060718
COLLECTION DATE:	NJDEP Groundwater	Target GW Conc.		6/5/2018	3/9/2018	3/9/2018	6/5/2018	3/14/2018	6/7/2018	3/14/2018	6/7/2018	3/9/2018	6/7/2018
Lab Analyte	VI Screening Level	TCR=1E-06	THQ=0.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
1,1,1-Trichloroethane	13,000	–	742	0.035 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.036 J	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	6	3.23	–	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	3700	–	24.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	8	5.18	0.619	4	0.2 U	0.2 U	0.2 U	0.17 J	0.29	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	50	7.64	–	0.092 J	0.2 U	0.026 J	0.2 U	0.11 J	0.052 J	0.32	0.38	0.1 J	0.11 J
1,1-Dichloroethene	260	–	19.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	130	–	3.59	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dibromo-3-Chloropropane	–	0.0281	3.47	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	6800	–	266	0.67	0.3 U	0.3 U	0.3 U	0.084 J	0.17 J	0.3 U	0.21 J	0.3 U	0.3 U
1,2-Dichloropropane	4	6.59	3.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	75	2.59	846	0.5	0.3 U	0.3 U	0.3 U	0.14 J	0.34	0.3 U	1	0.3 U	0.3 U
2-Butanone	2,500,000	–	224,000	10 U	4.4 J	4.5 J	10 U	47	32	10 U	10 U	10 U	8.6 J
2-Hexanone	–	–	821	3 U	3 U	3 U	3 U	3.1	2.9 J	3 U	1.3 J	3 U	3 U
4-Methyl-2-pentanone	900,000	–	55,500	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	21,000,000	–	2,250,000	7.4	63	86	32	47	170 B	6 U	20 B	44 J	80 B
Benzene	20	1.59	13.8	9.7	1.2	1.5	1.4	9.1 J	9.1	2.4	1.5	0.48	0.4
Carbon disulfide	1500	–	124	0.3 U	0.3 U	0.3 U	0.089 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	1	0.415	9.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	770	–	41	1.3	0.2 U	0.43	0.2 U	0.49 J	0.76	0.76	0.2 U	0.2 U	0.2 U
Chloroethane	26,000	–	2300	0.5 UJ	0.5 U*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*	0.5 U
Chloroform	70	0.814	68.1	0.069 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.21	0.2 U	0.15 J	0.049 J
Cyclohexane	16,000	–	102	7.8	14	14	15	2.8 JJ	2.2 J	1.2 J	0.77 J	12	8.1
Ethylbenzene	700	3.49	324	13	0.15 JB	0.14 J	0.057 J	0.23 B	0.2 B	0.28 B	0.72 B	0.4 B	0.25 B
Isopropylbenzene	–	–	88.7	80 D	9.9	9.2	7.3	7.8	11	24	21	25	15
m,p-Xylene	8600	–	35.5	8	0.72 B	0.5 U	0.31 J	0.92	0.8	1.3	2.6	1.1	0.66
Methyl tert-butyl ether	580	450	13,000	0.3 U	0.21 J	0.3 U	0.3 U	0.14 J	0.3 U	0.3 U	0.3 U	0.14 J	0.081 J
Methylene Chloride	920	760	471	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
o-Xylene	8600	–	49.2	12	0.58 B	0.54 B	0.5 U	1 B	2	8.9 B	8.9	1.3 B	0.65
Styrene	180,000	–	928	0.5 U	0.5 U	0.5 U	0.5 U	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	31	14.9	5.76	0.096 J	0.084 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	0.5 U	0.5 U
Toluene	330,000	–	1920	0.47	0.13 J	0.12 J	0.1 J	0.41	0.51	1.1	0.47	0.17 J	0.063 J
Trichloroethene	2	1.18	0.518	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.17 J	0.2 U	0.2 U
Vinyl chloride	1	0.147	9.10	0.079	0.02 U	0.02 U	0.02 U	0.02 U	0.053	0.066	0.02 U	0.02 U	0.02 U
SVOCs (ug/l)													
1,1-Biphenyl	–	–	3.31	48 U	5 U	5 U	4.8 U	4.9 U	20 U	4.9 U	5.1 U	5.1 U	10 U
1,4-Dioxane	–	2860	15900	0.48	3.3	3.7	4.7	9.6	6.5	0.14 J	0.11 J	1.2	2.1
Benzo(a)anthracene	–	34.4	–	1.9 U	0.021 J	0.027 J	0.023 J	0.98 U	10 U	0.011 J	1 U	0.1 U	2 U
Naphthalene	300	4.59	17.4	9.8	0.22 D	0.17 J	0.15 J	0.64 J	10 U	0.19 J	1 U	0.088 J	2 U
PCBs (ug/l)													
PCB-1260	–	0.358	–	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result corresponds to TCR > 1E-6 (yellow, italics)

Detected result corresponds to THQ > 0.1 (blue, underline)

Detected result corresponds to TCR > 1E-6 and THQ > 0.1 (green, bold)

TABLE TO-5

VAPOR INTRUSION SCREENING OF GROUNDWATER SAMPLES - RESIDENTIAL

SAMPLE ID:		USEPA Residential		MW-114.030818	MW-114.060618	MW-115.030918	MW-115.060618	MW-116.030818	MW-116.060618	MW-117.030818	MW-117.060618	MW-118.030818	MW-118.061118
COLLECTION DATE:	NJDEP Groundwater	Target GW Conc.		3/8/2018	6/6/2018	3/9/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/11/2018
Lab Analyte	VI Screening Level	TCR=1E-06	THQ=0.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
1,1,1-Trichloroethane	13,000	--	742	0.2 U	0.2 U	0.16 J	0.097 J	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
1,1,2,2-Tetrachloroethane	6	3.23	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
1,1,2-Trichloro-1,2,2-trifluoroethane	3700	--	24.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	50 UJ	500 U
1,1,2-Trichloroethane	8	5.18	0.619	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
1,1-Dichloroethane	50	7.64	--	0.2 U	0.2 U	0.056 J	0.061 J	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
1,1-Dichloroethene	260	--	19.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
1,2,4-Trichlorobenzene	130	--	3.59	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	30 UJ	300 U
1,2-Dibromo-3-Chloropropane	--	0.0281	3.47	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	200 UJ	2000 U
1,2-Dichlorobenzene	6800	--	266	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	30 UJ	300 U
1,2-Dichloropropane	4	6.59	3.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
1,4-Dichlorobenzene	75	2.59	846	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	30 UJ	300 U
2-Butanone	2,500,000	--	224,000	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	1000 UJ	10000 U
2-Hexanone	--	--	821	3 U	3 U	3 U	3 U	5.7	3 U	3 U	3 U	300 UJ	3000 UJ
4-Methyl-2-pentanone	900,000	--	55,500	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	200 J	5000 U
Acetone	21,000,000	--	2,250,000	6 U	61	2400 D	6 U	280 J	6 U	280 D	6 U	71000 J	51000 J
Benzene	20	1.59	13.8	0.12 J	0.2 U	40 U	0.55	0.064 J	0.049 J	0.2 U	0.2 U	*3.3 J*	200 U
Carbon disulfide	1500	--	124	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	30 UJ	300 U
Carbon tetrachloride	1	0.415	9.22	0.2 U	0.2 U	*0.54*	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
Chlorobenzene	770	--	41	0.69	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	20 U	200 U
Chloroethane	26,000	--	2300	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	50 UJ	500 UJ
Chloroform	70	0.814	68.1	0.2 U	0.07 J	0.2 U	0.2 U	0.2 UJ	0.2 U	0.31	0.2 U	20 UJ	200 U
Cyclohexane	16,000	--	102	3 U	3 U	11	4	3 UJ	3 U	3 U	3 U	150 UJ	300 UJ
Ethylbenzene	700	3.49	324	**550 BD**	*8 BJ-*	**480 D**	*270 D*	0.055 J	0.2 U	0.2 U	0.2 U	25 UJ	200 U
Isopropylbenzene	--	--	88.7	240 D	90 D	110 JD	31 J	1 UJ	1 U	1 U	1 U	19 J	1000 U
m,p-Xylene	8600	--	35.5	3000 D	0.5 U	1700 D	710 D	0.3 J	0.5 U	0.25 J	0.5 U	61	500 U
Methyl tert-butyl ether	580	450	13,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 UJ	0.3 U	0.3 U	0.3 U	11 J	300 U
Methylene Chloride	920	760	471	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	500 UJ	5000 U
o-Xylene	8600	--	49.2	360 BD	0.5 U	810 D	340 D	0.5 UJ	0.23 J	0.5 U	0.5 U	24 J	500 U
Styrene	180,000	--	928	0.5 U	0.5 U	1.8 B	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	20 UJ	500 U
Tetrachloroethene	31	14.9	5.76	0.5 U	0.5 U	0.59	0.36 J	0.5 UJ	0.5 U	0.17 J	0.5 U	50 UJ	500 U
Toluene	330,000	--	1920	18	4.8	210 D	60 D	0.2 UJ	0.2 U	0.2 U	0.2 U	230	270
Trichloroethene	2	1.18	0.518	0.2 U	0.2 U	0.6	0.39	0.2 UJ	0.2 U	0.2 U	0.2 U	20 UJ	200 U
Vinyl chloride	1	0.147	9.10	0.02 U	0.02 U	0.061	0.02 U	0.02 UJ	0.02 U	0.02 U	0.02 U	2 UJ	20 UJ
SVOCs (ug/l)													
1,1-Biphenyl	--	--	3.31	5 U	9.4 U	0.65 J	48 U	5.1 U	4.7 U	5 U	4.8 U	50 U	52 U
1,4-Dioxane	--	2860	15900	0.2 U	0.2 U	0.2 U	0.2 U	4	2.8	7.4	20	0.2 UJ	1 R
Benzo(a)anthracene	--	34.4	--	0.5 U	9.4 U	10 U	9.5 U	0.033 J	0.041 J	0.99 U	0.0037 J	5 U	0.3 J
Naphthalene	300	4.59	17.4	*8.3 D*	1.5 J	89	20	0.084 J	0.071 J	0.99 U	0.0057 J	0.65 J	5.2 U
PCBs (ug/l)													
PCB-1260	--	0.358	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.016	0.024

Notes:

PAL - Project Action Limit

NE - PAL Not Established

Detected result corresponds to TCR > 1E-6 (yellow, italics)

Detected result corresponds to THQ > 0.1 (blue, underline)

Detected result corresponds to TCR > 1E-6 and THQ > 0.1 (green, bold)

TABLE XXIV

VAPOR INTRUSION SCREENING OF GROUNDWATER SAMPLES - RESIDENTIAL

SAMPLE ID:		USEPA Residential		MW-119.030618	MW-119.060618	MW-120.030818	MW-120.060618	MW-121.030818	MW-121.060618	MW-122.030818	MW-122.060618	MW-123.031218	MW-123.060518
COLLECTION DATE:	NJDEP Groundwater	Target GW Conc.		3/6/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/8/2018	6/6/2018	3/12/2018	6/5/2018
Lab Analyte	VI Screening Level	TCR=1E-06	THQ=0.1	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (ug/l)													
1,1,1-Trichloroethane	13,000	--	742	0.2 U	0.2 U	0.2 U	0.2 U	0.059 J	0.2 U	0.2 U	0.2 U	0.04 J	0.2 U
1,1,2,2-Tetrachloroethane	6	3.23	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.087 J	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	3700	--	24.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	8	5.18	0.619	0.2 U	0.2 U	0.2 U	0.2 U	0.08 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	50	7.64	--	0.2 U	0.2 U	0.2 U	0.2 U	0.099 J	0.09 J	0.2 U	0.2 U	0.94	0.2
1,1-Dichloroethene	260	--	19.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	130	--	3.59	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dibromo-3-Chloropropane	--	0.0281	3.47	2 U	2 U	2 U	2 U	2 U	*1 J*	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	6800	--	266	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	4	6.59	3.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	75	2.59	846	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Butanone	2,500,000	--	224,000	10 U	10 U	10 U	10 U	10 U	10 U	6.5 J	10 U	3.8 J	3.6 J
2-Hexanone	--	--	821	1.3 J	3 U	3 U	3 U	3 U	3 U	1.7 J	1.3 J	1.4 J	3 U
4-Methyl-2-pentanone	900,000	--	55,500	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	21,000,000	--	2,250,000	28	6 U	87	21	52	12	34000 D	6 U	22	5 J
Benzene	20	1.59	13.8	0.2 U	0.2 U	0.074 J	0.035 J	0.2 U	0.2 U	0.044 J	0.033 J	0.2 U	0.2 U
Carbon disulfide	1500	--	124	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Carbon tetrachloride	1	0.415	9.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	770	--	41	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.085 J	0.2 U
Chloroethane	26,000	--	2300	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	70	0.814	68.1	0.041 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cyclohexane	16,000	--	102	3 U	0.51 J	0.46 J	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Ethylbenzene	700	3.49	324	0.2 U	0.2 U	0.2 U	0.2 U	0.11 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene	--	--	88.7	0.26 J	0.41 J	1 U	1 U	0.38 J	1 U	0.24 J	0.37 J	0.21 J	1 U
m,p-Xylene	8600	--	35.5	0.5 U	0.19 J	0.5 U	0.5 U	0.43 J	0.33 J	0.5 U	0.16 J	0.5 U	0.5 U
Methyl tert-butyl ether	560	450	13,000	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.9	1
Methylene Chloride	920	760	471	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
o-Xylene	8600	--	49.2	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U	0.22 J	0.5 U	0.17 J	0.5 U	0.5 U
Styrene	160,000	--	928	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	31	14.9	5.76	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	330,000	--	1920	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.052 J	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	2	1.18	0.518	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	1	0.147	9.10	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	*0.44*	0.13
SVOCs (ug/l)													
1,1-Biphenyl	--	--	3.31	5 U	4.6 U	5 U	4.8 U	5.1 U	4.7 U	5.1 U	4.8 U	4.9 U	4.9 U
1,4-Dioxane	--	2860	15900	0.2 U	0.98	0.19 J	0.18 J	1.8	1.9	0.33	0.37	13	8.5
Benzo(a)anthracene	--	34.4	--	0.0065 J	0.039 J	0.011 J	0.015 J	0.029 J	0.024 J	0.1 U	0.096 U	0.005 J	0.0035 J
Naphthalene	300	4.59	17.4	0.043 J	0.2	0.021 J	0.033 J	0.072 J	0.067 J	0.062 J	0.034 J	0.01 J	0.0044 J
PCBs (ug/l)													
PCB-1260	--	0.358	--	0.018	0.01 U	0.01 U	0.01 U	0.0091 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:

PAL - Project Action Limit

NE - PAL Not Established

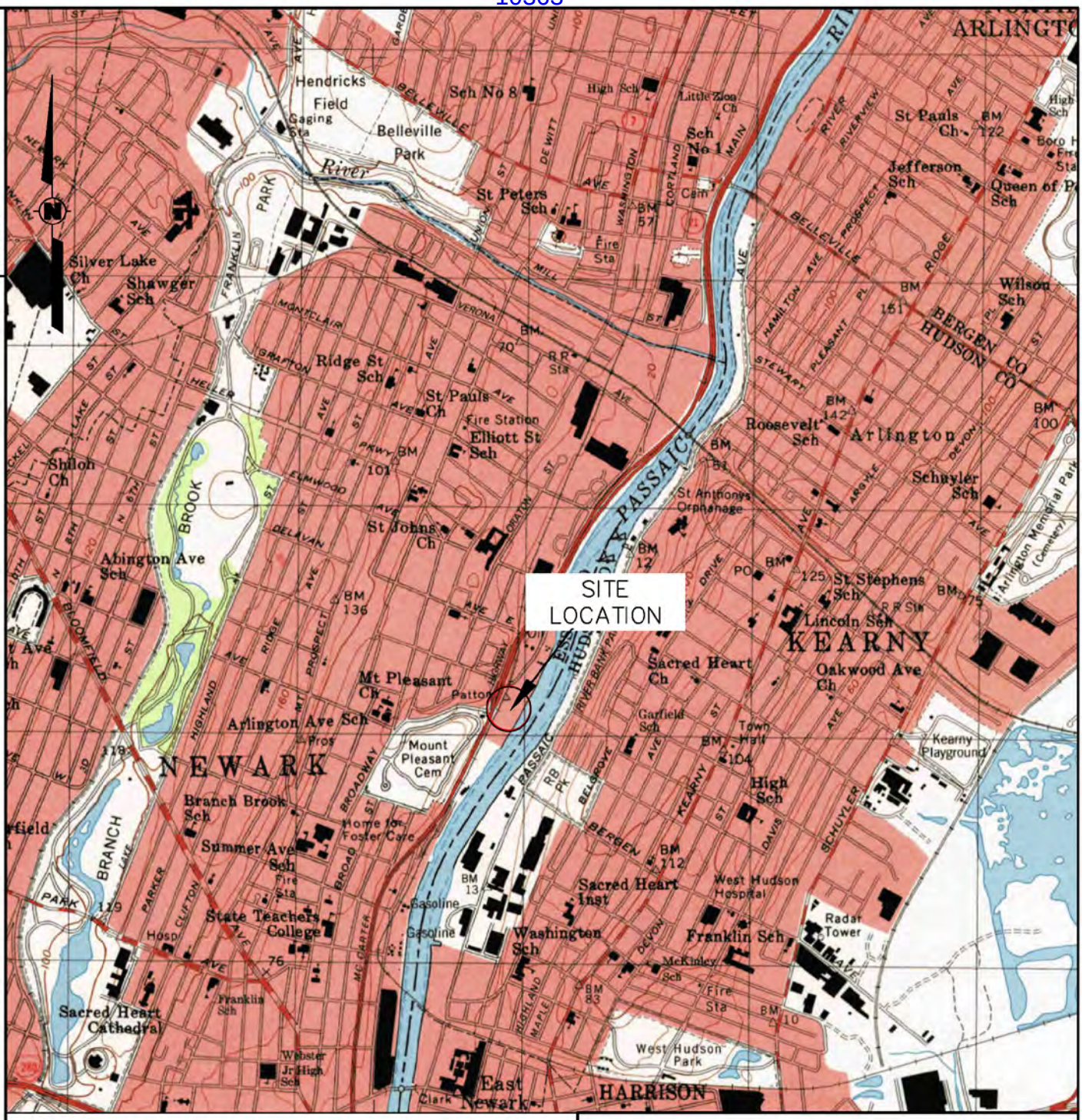
Detected result corresponds to TCR > 1E-6 (yellow, italics)

Detected result corresponds to THQ > 0.1 (blue, underline)

Detected result corresponds to TCR > 1E-6 and THQ > 0.1 (green, bold)

FIGURES

DRAWING NUMBER 13620A1



SCALE

0 2000 4000 FEET

NEW JERSEY

QUADRANGLE LOCATION

REFERENCE:
USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE; ORANGE, NEW JERSEY, 1995.

FIGURE 1–1

SITE LOCATION MAP

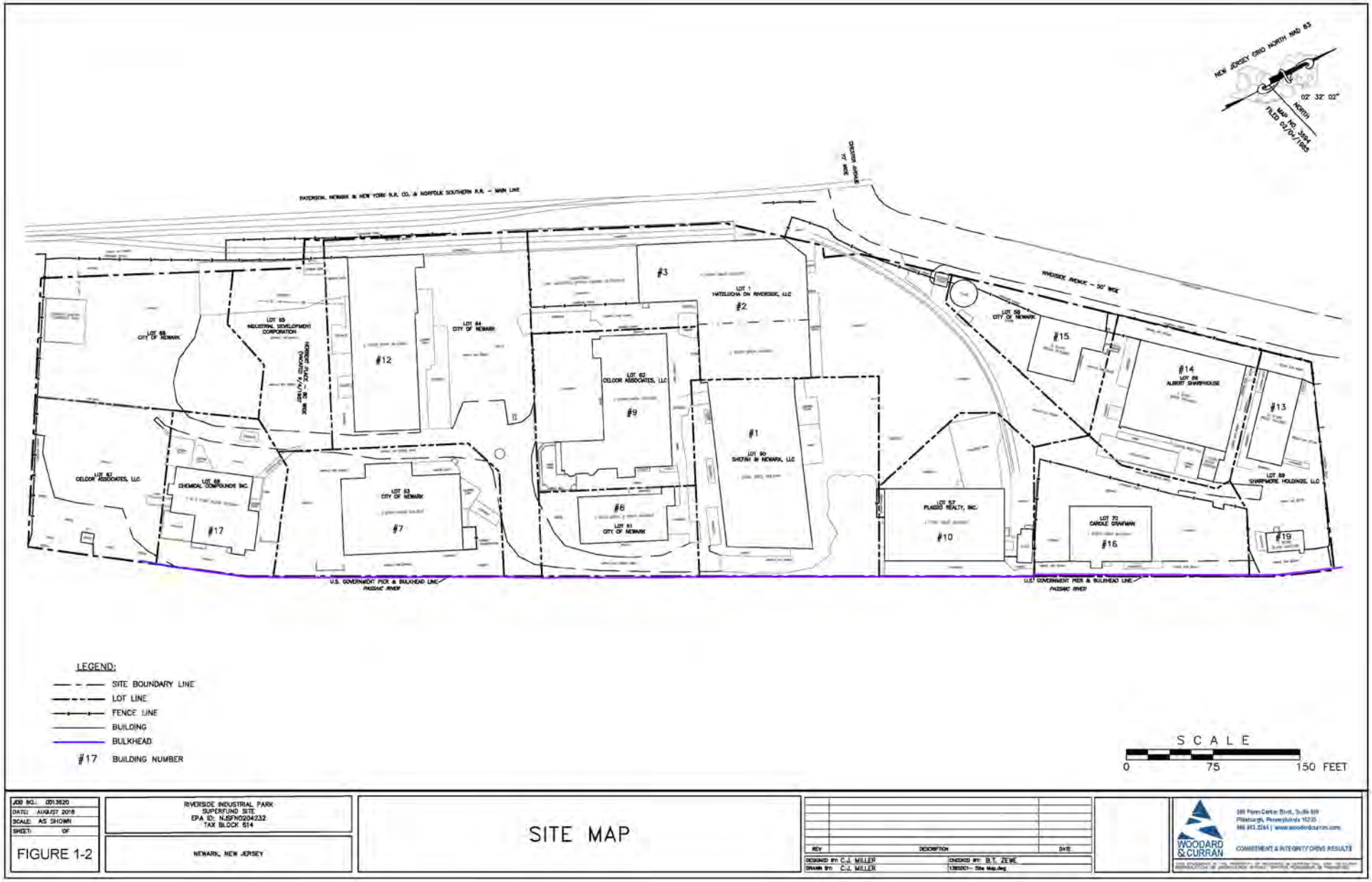
RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
NEWARK, NEW JERSEY

WOODARD & CURRAN
300 Penn Center Boulevard | Suite 800
Pittsburgh, PA 15235
412-241-4500 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

DRAWING NUMBER 13620A1

REVISION	DATE	DESCRIPTION

DRAWN BY:	D.J. Martino	DATE:	06–18–14
CHECKED BY:	B.T. Zewe	DATE:	07–08–14
APPROVED BY:	K.J. Bird	DATE:	07–08–14



JOB NO.: 0013620
DATE: AUGUST 2018
SCALE: AS SHOWN
SHEET: OF

FIGURE 1-2

RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614

NEWARK, NEW JERSEY

SITE MAP

REV	DESCRIPTION	DATE
	DESIGNED BY: C.J. MILLER	CHECKED BY: B.T. ZEWE
	DRAWN BY: C.J. MILLER	13620C1– Site Map.dwg

WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS


DRAWING NUMBER 11602B4
Herbert Pl
Riverside Ave
Chester Ave E
McCarter Hwy
21
68
65
64
62
1
58
59
67
66
63
61
60
57
70
69
DEED NOTICE W/ ENGINEERING CONTROLS
(ASPHALT CAP)
(LOTS 66, 67, AND 68)
DEED NOTICE W/ ENGINEERING CONTROL
HISTORIC FILL IMPACTS BENEATH BUILDINGS
(CONCRETE SLABS)
(LOTS 61 AND 63)
DEED NOTICE W/ ENGINEERING CONTROLS
(ASPHALT/CONCRETE, FENCE, AND
WARNING SIGNS)
(LOT 70)
LEGEND
ENGINEERING CONTROL
SCALE
0
100
200 FEET
PLOT SCALE: 1=1
FIGURE 1-3
DEED NOTICES AND
ENGINEERING CONTROLS MAP
RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
NEWARK, NEW JERSEY
WOODARD & CURRAN
300 Penn Center Boulevard | Suite 800
Pittsburgh, PA 15235
412-241-4500 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS
DRAWING NUMBER
11602B4
REVISION
DATE
DESCRIPTION
DRAWN BY: D.J. Martino
DATE: 12-23-14
CHECKED BY: B.T. Zewe
DATE: 12-29-14
APPROVED BY: K.J. Bird
DATE: 12-29-14

DRAWING NUMBER 11602B2

BLOCK 614 LOT #	BUILDING #	OWNER
1	2,3	HATZLUCHA ON RIVERSIDE, LLC.
57	10	PLAGRO REALTY, INC.
58	15, 15A	CITY OF NEWARK
59	14	ALBERT SHARPHOUSE
60	1	SHEFAH IN NEWARK, LLC.
61	6	CITY OF NEWARK
62	9	CECLOR ASSOC., LLC.
63	7	CITY OF NEWARK
64	12	CITY OF NEWARK
65	NA	INDUSTRIAL DEV. CORP.
66	17	CHEMICAL COMPOUNDS, INC
67	NA	CECLOR ASSOC., LLC.
68	NA	CITY OF NEWARK
69	13, 19	SHARPMORE HOLDING INC.
70	16	ESTATE OF CAROLE GRAIFMAN

LEGEND

- FORMER BUILDING FOOTPRINT
- APPROXIMATE SITE BOUNDARY
- APPROXIMATE LOT BOUNDARY
- 61 LOT NUMBER
- #17 BUILDING NUMBER
- VACANT BUILDING

SCALE
0 120 240 FEET

PLOT SCALE: 1=1

REVISION	DATE	DESCRIPTION
#1	6/28/16	Add Building Numbers
#2	4/6/17	Add Former Building Footprints
#3	9/26/18	Update

FIGURE 2-1

PARCEL AND BUILDING LOCATION MAP

RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
NEWARK, NEW JERSEY

300 Penn Center Boulevard | Suite 800
Pittsburgh, PA 15235
412-241-4500 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

DRAWING NUMBER 11602B2

DRAWN BY: T.N. Fitzroy	DATE: 3/24/14
CHECKED BY: B.T. Zewe	DATE: 07/08/14
APPROVED BY: K.J. Bird	DATE: 07/08/14

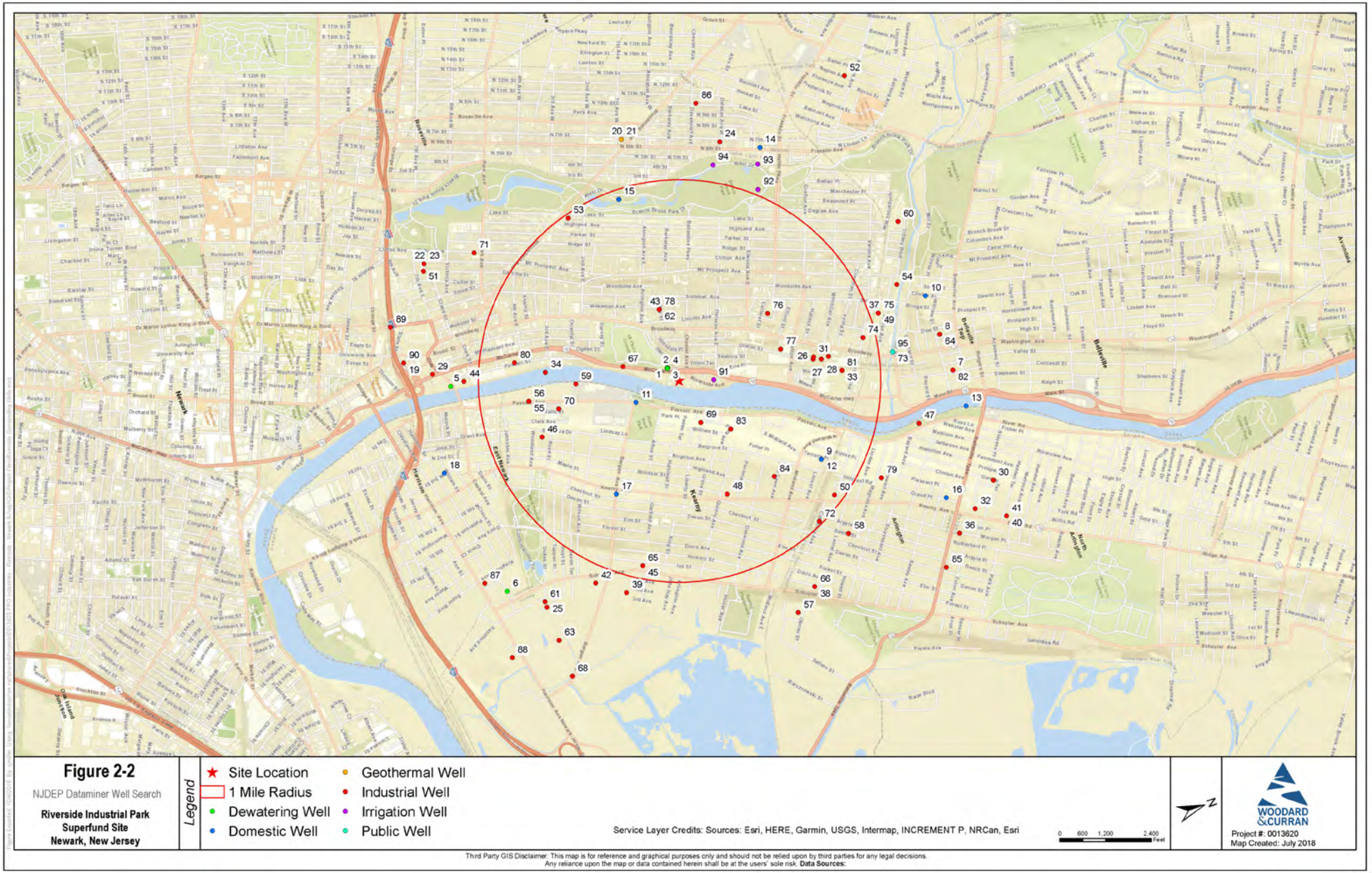
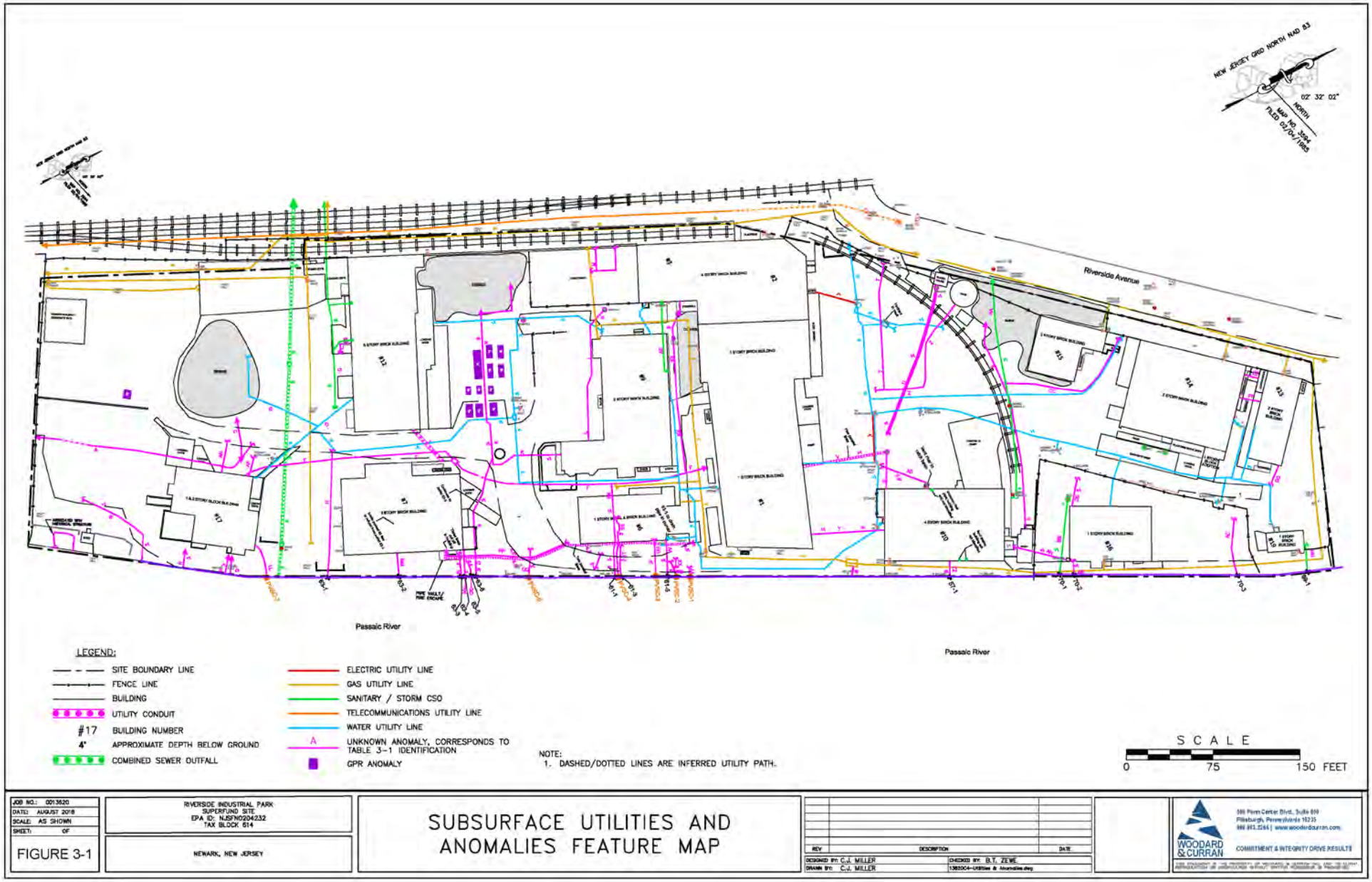
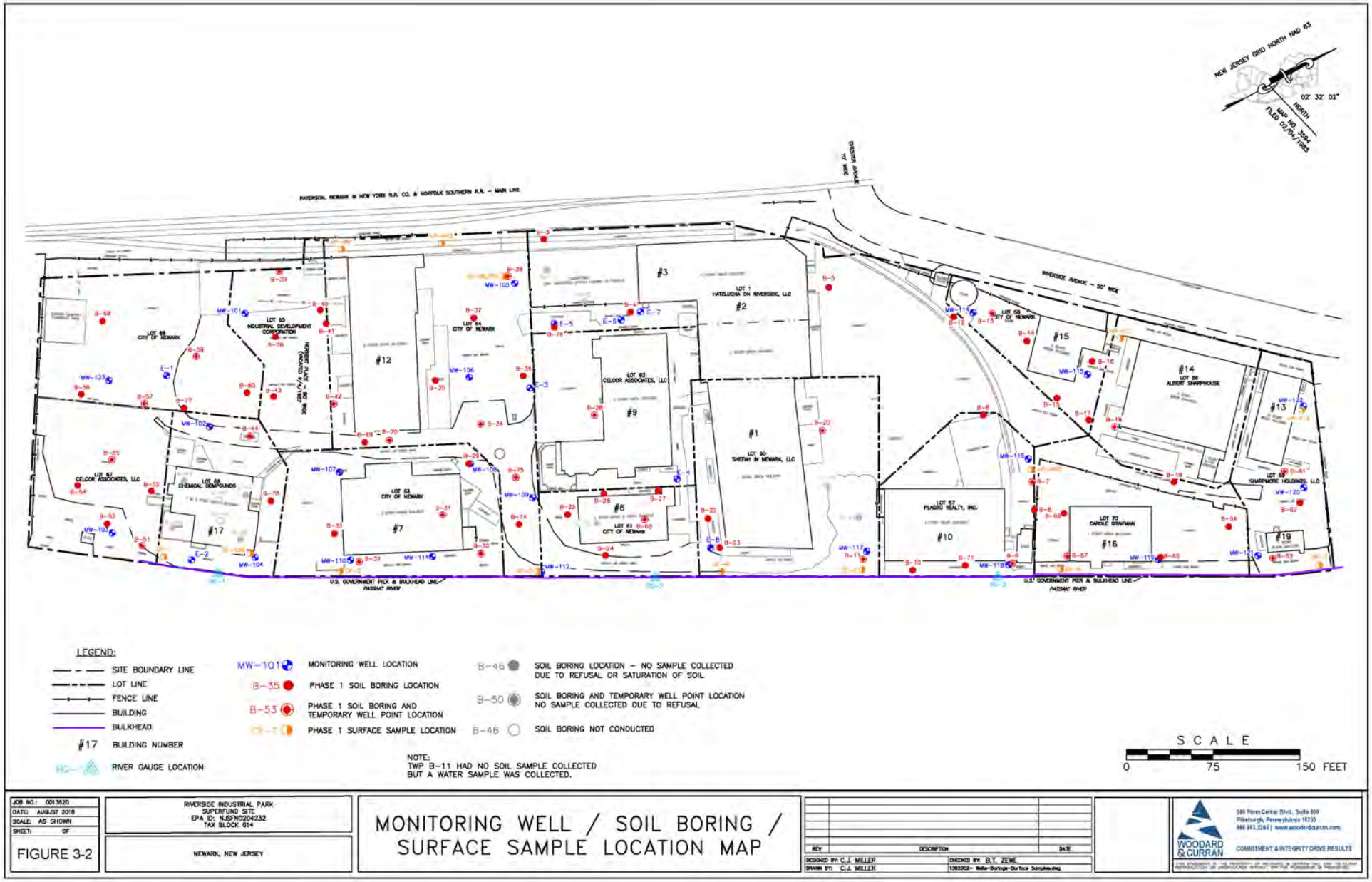
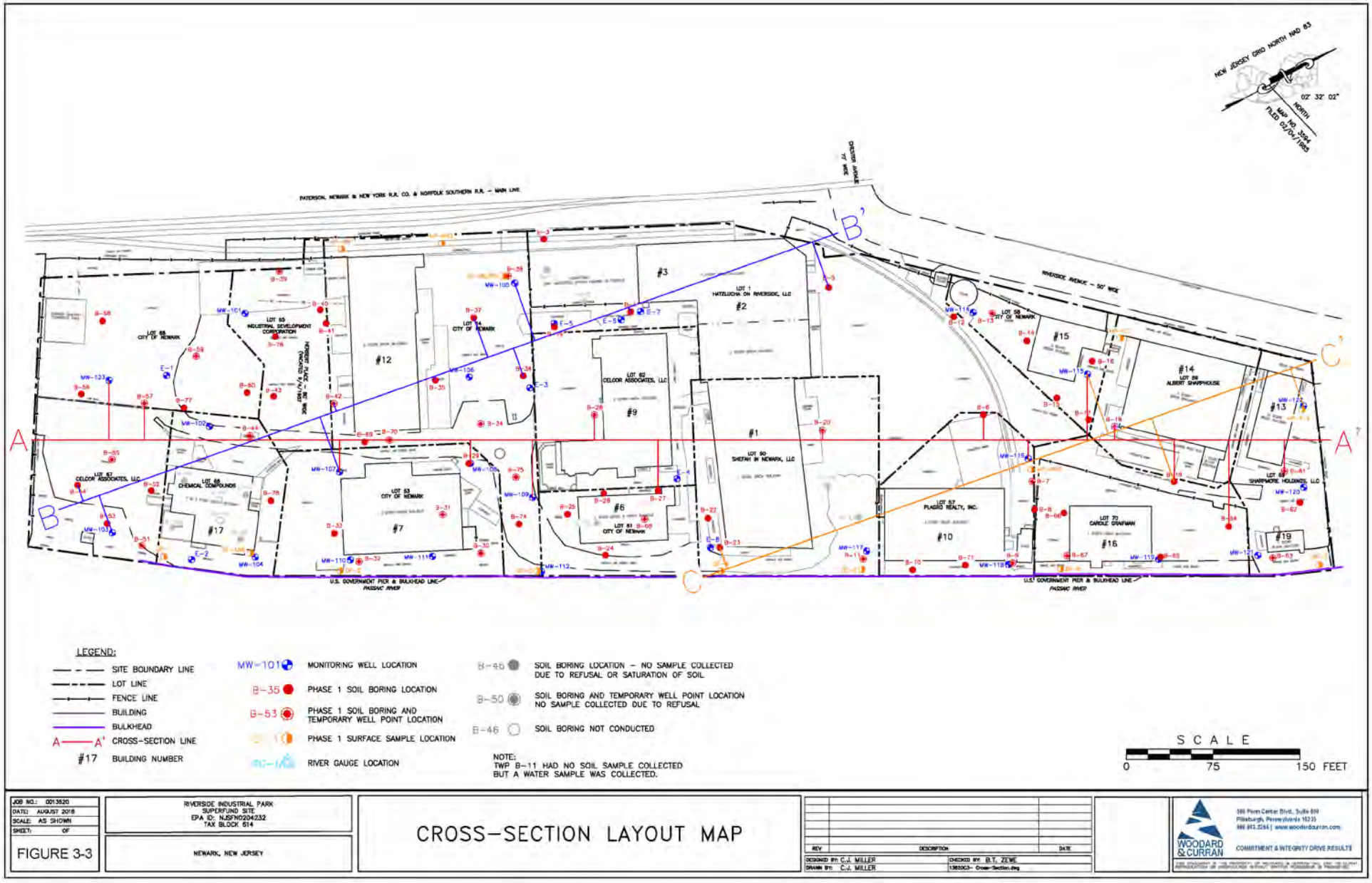


Figure 2-2
NJDEP Dataminer Well Search
Riverside Industrial Park
Superfund Site
Newark, New Jersey
Legend
Site Location
1 Mile Radius
Dewatering Well
Domestic Well
Geothermal Well
Industrial Well
Irrigation Well
Public Well
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri
0 600 1,200 2,400 Feet
N
WOODARD &CURRAN
Project #: 0013620
Map Created: July 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.
Any reliance upon the map or data contained herein shall be at the users' sole risk. Data Sources:


NEW JERSEY GRID NORTH NAD 83
02° 32' 02"
NORTH
MAP NO. 3504
FILED 05/04/1965
Riverside Avenue
Passaic River
Passaic River
LEGEND:
SITE BOUNDARY LINE
FENCE LINE
BUILDING
UTILITY CONDUIT
#17 BUILDING NUMBER
4' APPROXIMATE DEPTH BELOW GROUND
COMBINED SEWER OUTFALL
ELECTRIC UTILITY LINE
GAS UTILITY LINE
SANITARY / STORM CSO
TELECOMMUNICATIONS UTILITY LINE
WATER UTILITY LINE
A UNKNOWN ANOMALY, CORRESPONDS TO TABLE 3-1 IDENTIFICATION
GPR ANOMALY
NOTE:
1. DASHED/DOTTED LINES ARE INFERRED UTILITY PATH.
SCALE
0 75 150 FEET
JOB NO.: 0013620
DATE: AUGUST 2018
SCALE: AS SHOWN
SHEET: OF
FIGURE 3-1
RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614
NEWARK, NEW JERSEY
SUBSURFACE UTILITIES AND ANOMALIES FEATURE MAP
REV DESCRIPTION DATE
DESIGNED BY: C.J. MILLER
DRAWN BY: C.J. MILLER
CHECKED BY: B.T. ZEWE
WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS


NEW JERSEY GRID NORTH NAD 83
02° 32' 02"
NORTH
MAP NO 3584
FILED 05/04/1965
PATERSON, NEWARK & NEW YORK R.R. CO. & NORFOLK SOUTHERN R.R. – MAIN LINE
CHESTER AVENUE 77' WIDE
RIVERSIDE AVENUE – 50' WIDE
#1
#2
#3
#6
#7
#9
#10
#12
#13
#14
#15
#16
#17
#19
LOT 66 CITY OF NEWARK
LOT 55 INDUSTRIAL DEVELOPMENT CORPORATION
LOT 54 CITY OF NEWARK
LOT 1 HATZOLOCHA ON RIVERSIDE, LLC
LOT 62 CELCOR ASSOCIATES, LLC
LOT 90 SHEFAH IN NEWARK, LLC
LOT 57 CELCOR ASSOCIATES, LLC
LOT 56 CHEMICAL COMPOUNDS
LOT 53 CITY OF NEWARK
LOT 91 CITY OF NEWARK
LOT 57 PLAGGO REALTY, INC.
LOT 73 CAROLE GRAFMAN
LOT 89 ALBERT SHARPHOUSE
LOT 88 SHARPMORE HOLDINGS, LLC
LOT 58 CITY OF NEWARK
HORSEHILL PLACE – 40' WIDE
U.S. GOVERNMENT PIER & BULKHEAD LINE PASSAIC RIVER
U.S. GOVERNMENT PIER & BULKHEAD LINE PASSAIC RIVER
LEGEND:
SITE BOUNDARY LINE
LOT LINE
FENCE LINE
BUILDING
BULKHEAD
#17 BUILDING NUMBER
RIVER GAUGE LOCATION
MW-101 MONITORING WELL LOCATION
B-35 PHASE 1 SOIL BORING LOCATION
B-53 PHASE 1 SOIL BORING AND TEMPORARY WELL POINT LOCATION
PHASE 1 SURFACE SAMPLE LOCATION
B-46 SOIL BORING LOCATION – NO SAMPLE COLLECTED DUE TO REFUSAL OR SATURATION OF SOIL
B-50 SOIL BORING AND TEMPORARY WELL POINT LOCATION NO SAMPLE COLLECTED DUE TO REFUSAL
B-46 SOIL BORING NOT CONDUCTED
NOTE:
TWP B-11 HAD NO SOIL SAMPLE COLLECTED BUT A WATER SAMPLE WAS COLLECTED.
SCALE
0 75 150 FEET
JOB NO.: 0013620
DATE: AUGUST 2018
SCALE: AS SHOWN
SHEET: OF
FIGURE 3-2
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614
NEWARK, NEW JERSEY
MONITORING WELL / SOIL BORING / SURFACE SAMPLE LOCATION MAP
REV DESCRIPTION DATE
DESIGNED BY: C.J. MILLER
DRAWN BY: C.J. MILLER
CHECKED BY: B.T. ZEWE
WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS



JOB NO.: 0013620
DATE: AUGUST 2018
SCALE: AS SHOWN
SHEET: OF

FIGURE 3-3

RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614

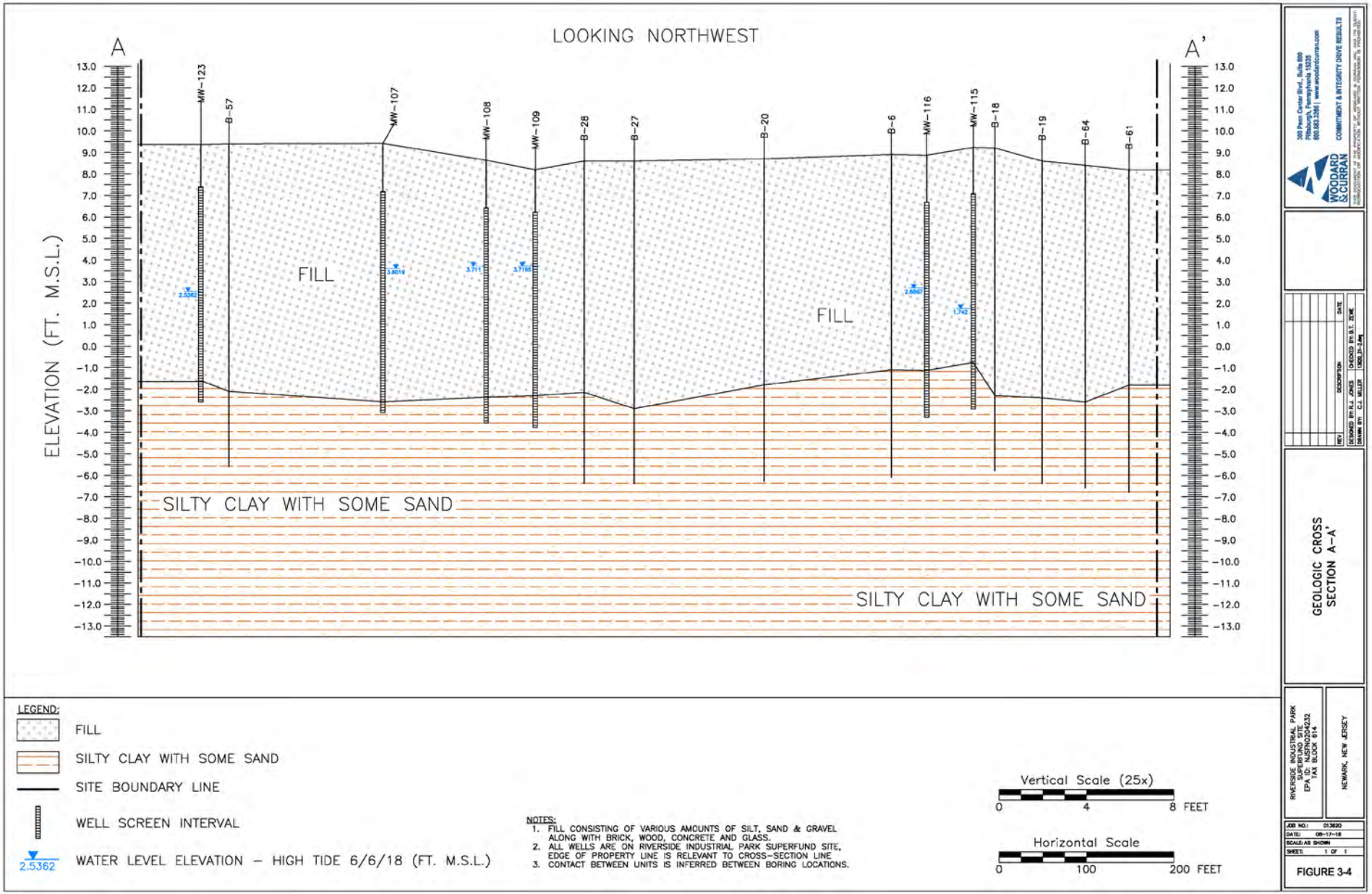
NEWARK, NEW JERSEY

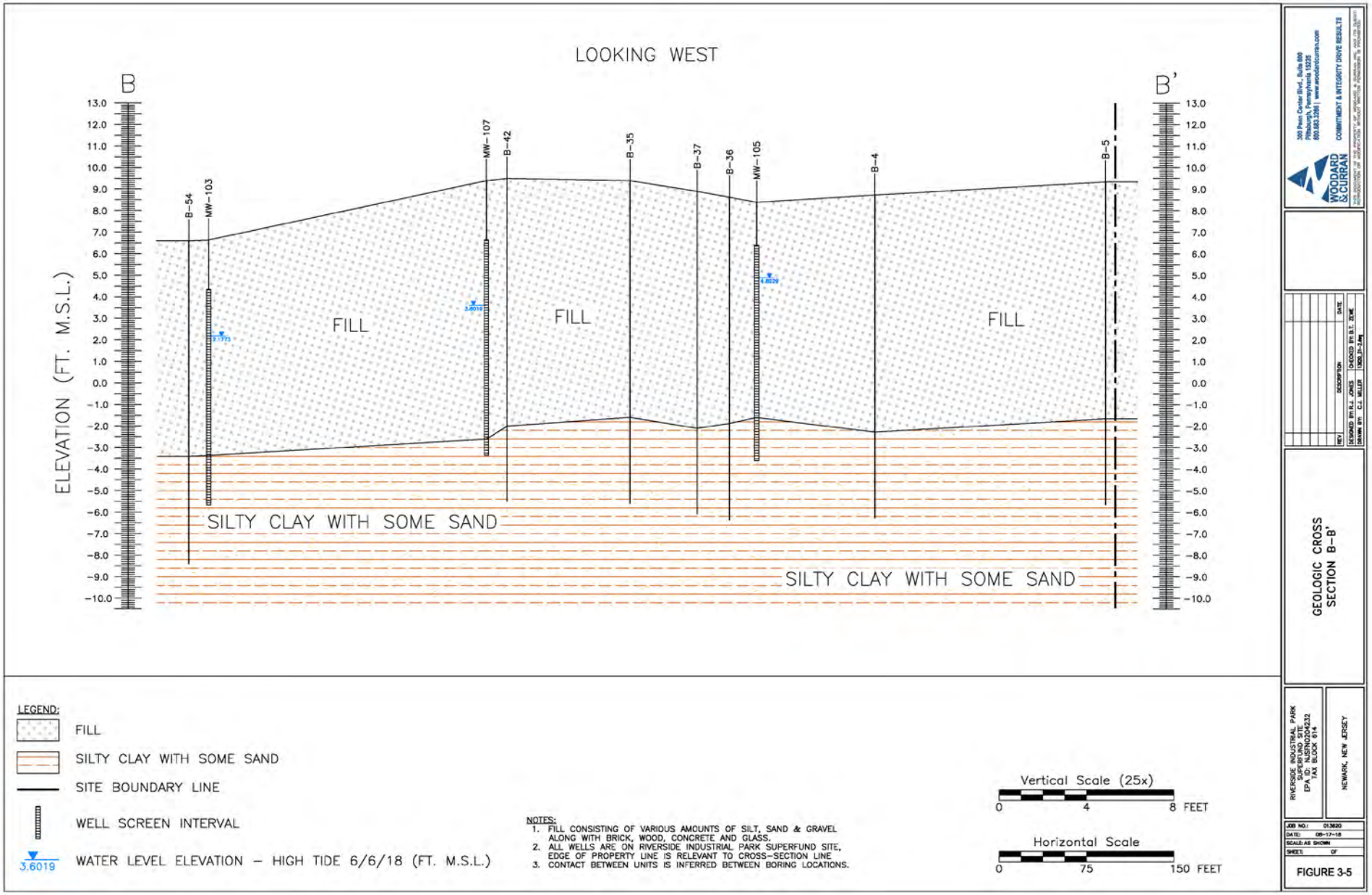
CROSS-SECTION LAYOUT MAP

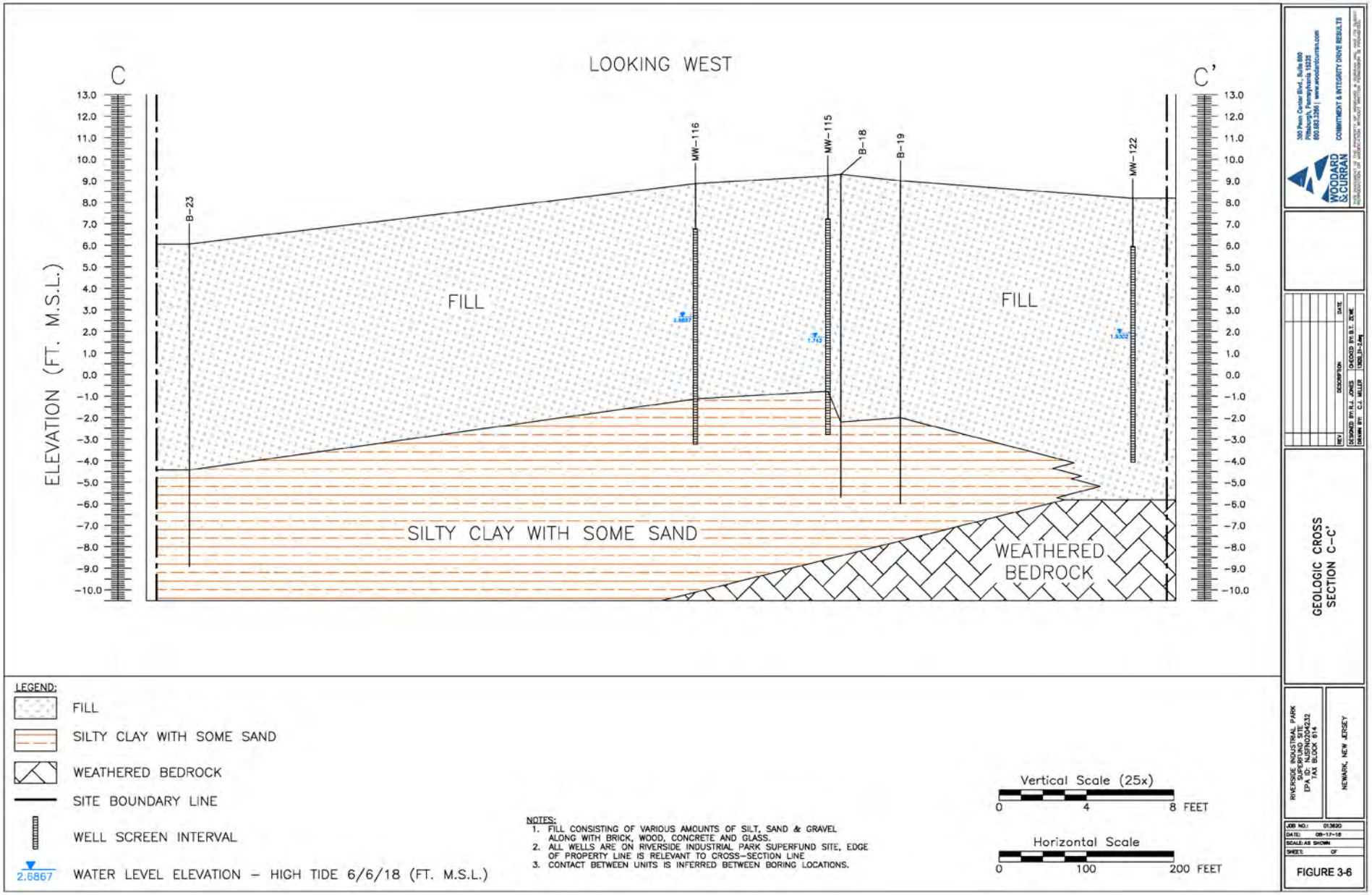
REV	DESCRIPTION	DATE

DESIGNED BY: C.J. MILLER
DRAWN BY: C.J. MILLER
CHECKED BY: B.T. ZEWE
13620C3- Cross-Section.dwg

WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS


LOOKING NORTHWEST
A
A'
ELEVATION (FT. M.S.L.)
MW-123
B-57
MW-107
MW-108
MW-109
B-28
B-27
B-20
B-6
MW-116
MW-115
B-18
B-19
B-64
B-61
FILL
FILL
SILTY CLAY WITH SOME SAND
SILTY CLAY WITH SOME SAND
LEGEND:
FILL
SILTY CLAY WITH SOME SAND
SITE BOUNDARY LINE
WELL SCREEN INTERVAL
2.5362
WATER LEVEL ELEVATION – HIGH TIDE 6/6/18 (FT. M.S.L.)
NOTES:
1. FILL CONSISTING OF VARIOUS AMOUNTS OF SILT, SAND & GRAVEL ALONG WITH BRICK, WOOD, CONCRETE AND GLASS.
2. ALL WELLS ARE ON RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE, EDGE OF PROPERTY LINE IS RELEVANT TO CROSS-SECTION LINE.
3. CONTACT BETWEEN UNITS IS INFERRED BETWEEN BORING LOCATIONS.
Vertical Scale (25x)
0 4 8 FEET
Horizontal Scale
0 100 200 FEET
GEOLOGIC CROSS SECTION A-A'
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE EPA ID: NJSFN0204232 / AA BLOCK 614
NEWARK, NEW JERSEY
JOB NO.: 013620
DATE: 08-17-18
SCALE: AS SHOWN
SHEET: 1 OF 1
FIGURE 3-4


LOOKING WEST
B
B'
ELEVATION (FT. M.S.L.)
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
-9.0
-10.0
B-54
MW-103
MW-107
B-42
B-35
B-37
B-36
MW-105
B-4
B-5
FILL
FILL
FILL
SILTY CLAY WITH SOME SAND
SILTY CLAY WITH SOME SAND
LEGEND:
FILL
SILTY CLAY WITH SOME SAND
SITE BOUNDARY LINE
WELL SCREEN INTERVAL
3.6019
WATER LEVEL ELEVATION – HIGH TIDE 6/6/18 (FT. M.S.L.)
NOTES:
1. FILL CONSISTING OF VARIOUS AMOUNTS OF SILT, SAND & GRAVEL ALONG WITH BRICK, WOOD, CONCRETE AND GLASS.
2. ALL WELLS ARE ON RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE.
3. EDGE OF PROPERTY LINE IS RELEVANT TO CROSS-SECTION LINE.
CONTACT BETWEEN UNITS IS INFERRED BETWEEN BORING LOCATIONS.
Vertical Scale (25x)
0
4
8 FEET
Horizontal Scale
0
75
150 FEET
WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS
GEOLOGIC CROSS SECTION B-B'
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
EPA ID: NJSFN0204232
NEWARK, NEW JERSEY
FIGURE 3-5


LOOKING WEST
C
C'
ELEVATION (FT. M.S.L.)
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
-9.0
-10.0
B-23
MW-116
MW-115
B-18
B-19
MW-122
FILL
FILL
SILTY CLAY WITH SOME SAND
WEATHERED BEDROCK
LEGEND:
FILL
SILTY CLAY WITH SOME SAND
WEATHERED BEDROCK
SITE BOUNDARY LINE
WELL SCREEN INTERVAL
2.6867
WATER LEVEL ELEVATION – HIGH TIDE 6/6/18 (FT. M.S.L.)
NOTES:
1. FILL CONSISTING OF VARIOUS AMOUNTS OF SILT, SAND & GRAVEL ALONG WITH BRICK, WOOD, CONCRETE AND GLASS.
2. ALL WELLS ARE ON RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE, EDGE OF PROPERTY LINE IS RELEVANT TO CROSS-SECTION LINE.
3. CONTACT BETWEEN UNITS IS INFERRED BETWEEN BORING LOCATIONS.
Vertical Scale (25x)
0
4
8 FEET
Horizontal Scale
0
100
200 FEET
WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS
GEOLOGIC CROSS SECTION C-C'
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
EPA ID: NJSFN0204232
/AA BLOCK 614
NEWARK, NEW JERSEY
JOB NO.: 013620
DATE: 08-17-18
SCALE: AS SHOWN
SHEET: OF
FIGURE 3-6


Soil Sampling Locations
2,3,7,8-TCDD Surface
PAL = 0.0048 ug/kg
0.00276
0.013
0.00244
0.0208
0.00169
0.00752
0.000377
J EMPC
0.00238
0.00666
Figure 3-7
Soil Sampling Locations
2,3,7,8-TCDD
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
Sampling Locations
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


Benzene Surface
PAL = 5 ug/kg
Benzene Subsurface
PAL = 5 ug/kg
Figure 3-8
Benzene
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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Trichloroethylene (TCE) Surface
PAL = 10 ug/kg
Trichloroethylene (TCE) Subsurface
PAL = 10 ug/kg
Figure 3-9
Trichloroethylene (TCE)
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.
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Tetrachloroethylene (PCE) Surface
PAL = 5 ug/kg
Tetrachloroethylene (PCE) Subsurface
PAL = 5 ug/kg
Figure 3-10
Tetrachloroethylene (PCE) Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.
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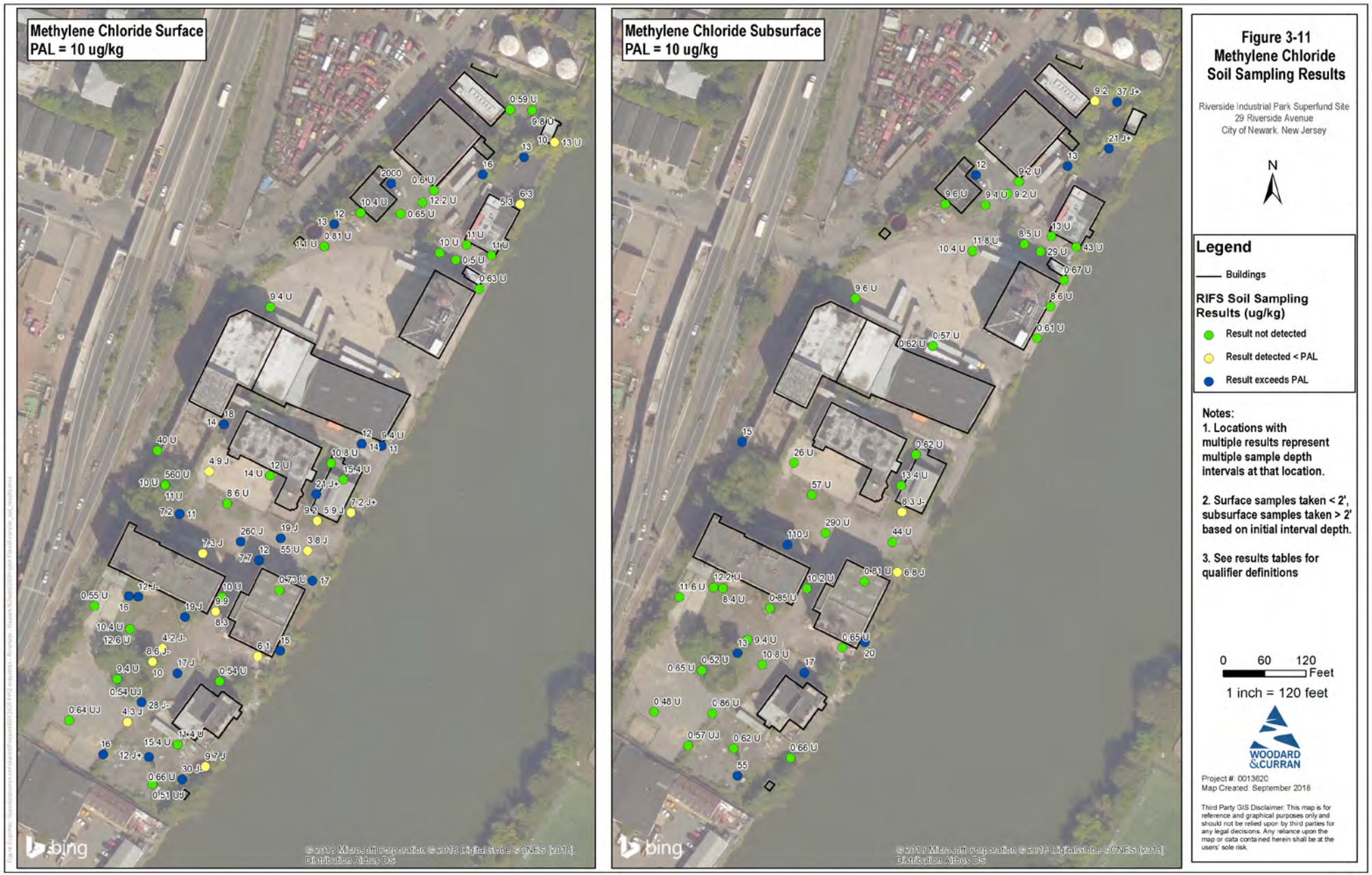
Methylene Chloride Surface
PAL = 10 ug/kg
Methylene Chloride Subsurface
PAL = 10 ug/kg
Figure 3-11
Methylene Chloride
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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Benzo(a)Anthracene Surface
PAL = 800 ug/kg
Benzo(a)Anthracene Subsurface
PAL = 800 ug/kg
Figure 3-12
Benzo(a)Anthracene
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
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Benzo(a)Pyrene Surface
PAL = 110 ug/kg
Benzo(a)Pyrene Subsurface
PAL = 110 ug/kg
Figure 3-13
Benzo(a)Pyrene
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
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Benzo(b)Fluoranthene Surface
PAL = 1100 ug/kg
Benzo(b)Fluoranthene Subsurface
PAL = 1100 ug/kg
Figure 3-14
Benzo(b)Fluoranthene
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
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Dibenzo(a,h)Anthracene Surface
PAL = 110 ug/kg
Dibenzo(a,h)Anthracene Subsurface
PAL = 110 ug/kg
Figure 3-15
Dibenzo(a,h)Anthracene
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling
Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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Indeno(1,2,3-c,d)Pyrene Surface
PAL = 1100 ug/kg
Indeno(1,2,3-c,d)Pyrene Subsurface
PAL = 1100 ug/kg
Figure 3-16
Indeno(1,2,3-c,d)Pyrene
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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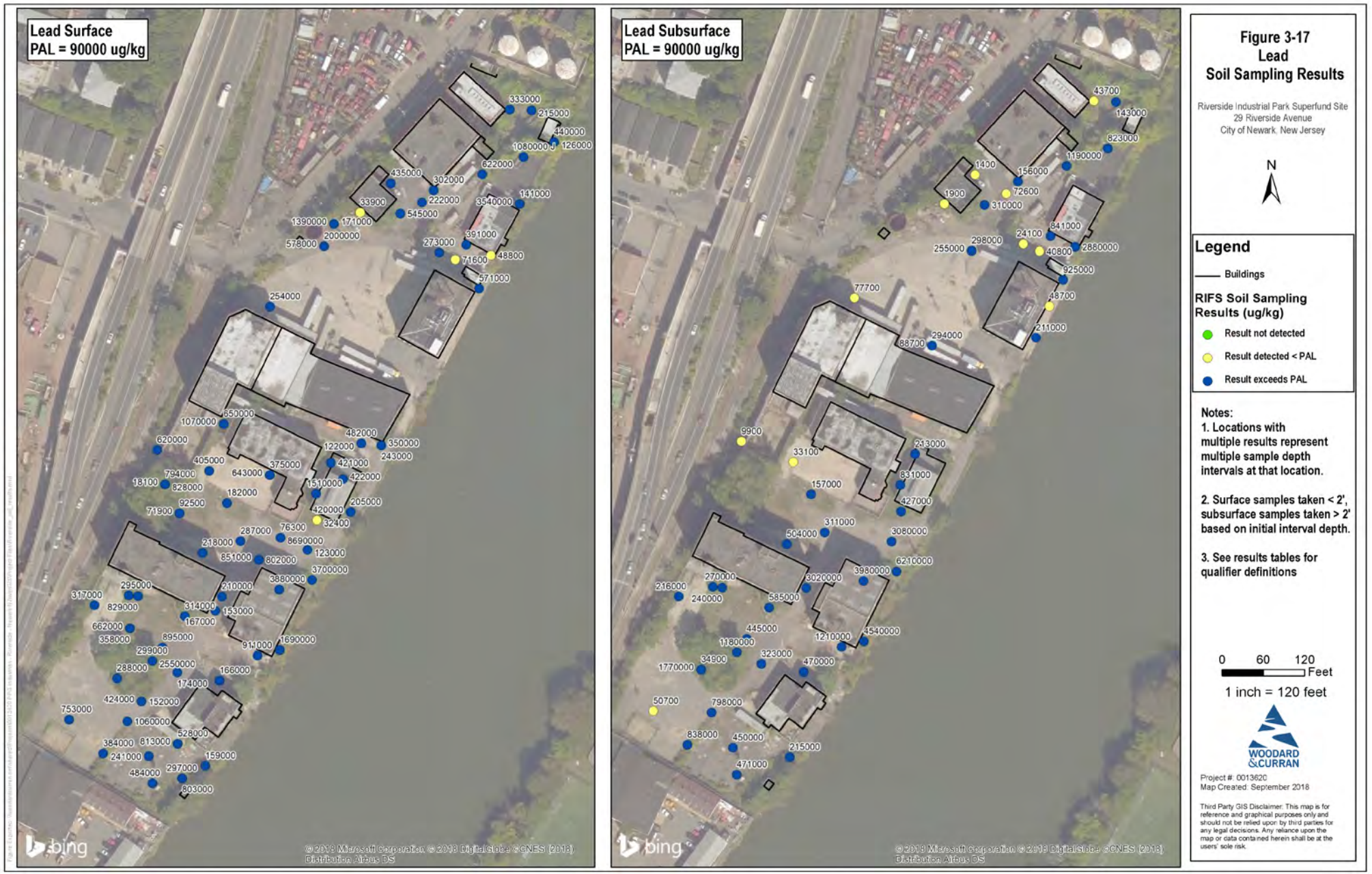
Lead Surface
PAL = 90000 ug/kg
333000
215000
440000
1080000 J
126000
622000
435000
302000
222000
33900
545000
3540000
141000
1390000
171000
2000000
578000
273000
391000
71600
48800
571000
254000
1070000
650000
482000
620000
122000
350000
243000
405000
375000
421000
794000
643000
422000
18100
828000
1510000
182000
92500
205000
71900
420000
32400
287000
76300
218000
8690000
123000
851000
802000
3700000
3880000
295000
210000
317000
829000
314000
153000
167000
662000
358000
895000
299000
911000
1690000
288000
2550000
166000
174000
424000
152000
753000
1060000
528000
384000
813000
241000
159000
484000
297000
803000
bing
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Distribution Airbus DS
Lead Subsurface
PAL = 90000 ug/kg
43700
143000
823000
1190000
1400
156000
1900
72600
310000
841000
24100
255000
298000
40800
2880000
925000
77700
48700
211000
294000
88700
9900
213000
33100
831000
157000
427000
311000
504000
3080000
6210000
3980000
270000
3020000
216000
240000
585000
445000
1540000
1180000
1210000
323000
34900
470000
1770000
50700
798000
838000
450000
215000
471000
bing
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Distribution Airbus DS
Figure 3-17
Lead
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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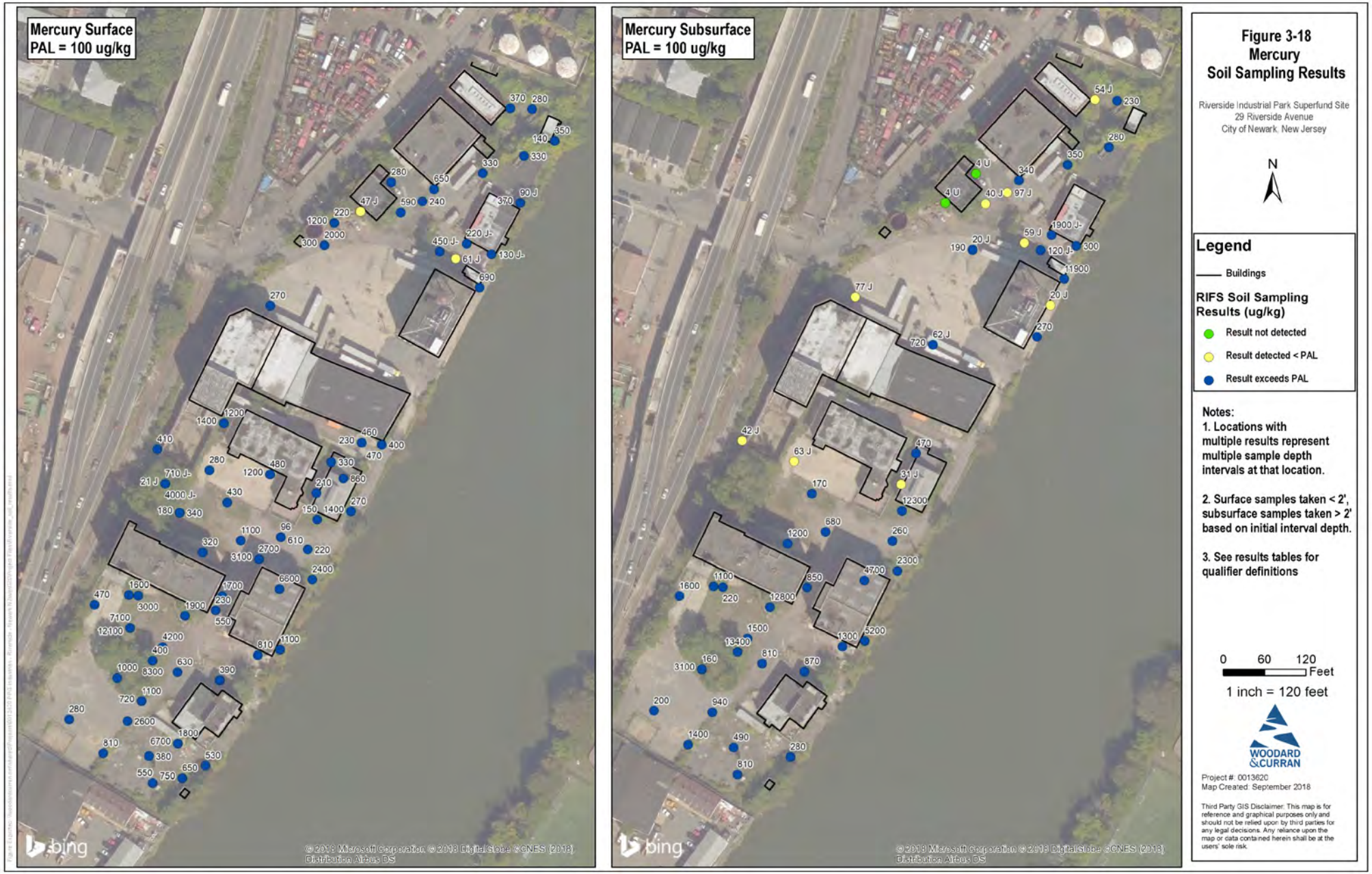
Mercury Surface
PAL = 100 ug/kg
Mercury Subsurface
PAL = 100 ug/kg
Figure 3-18
Mercury
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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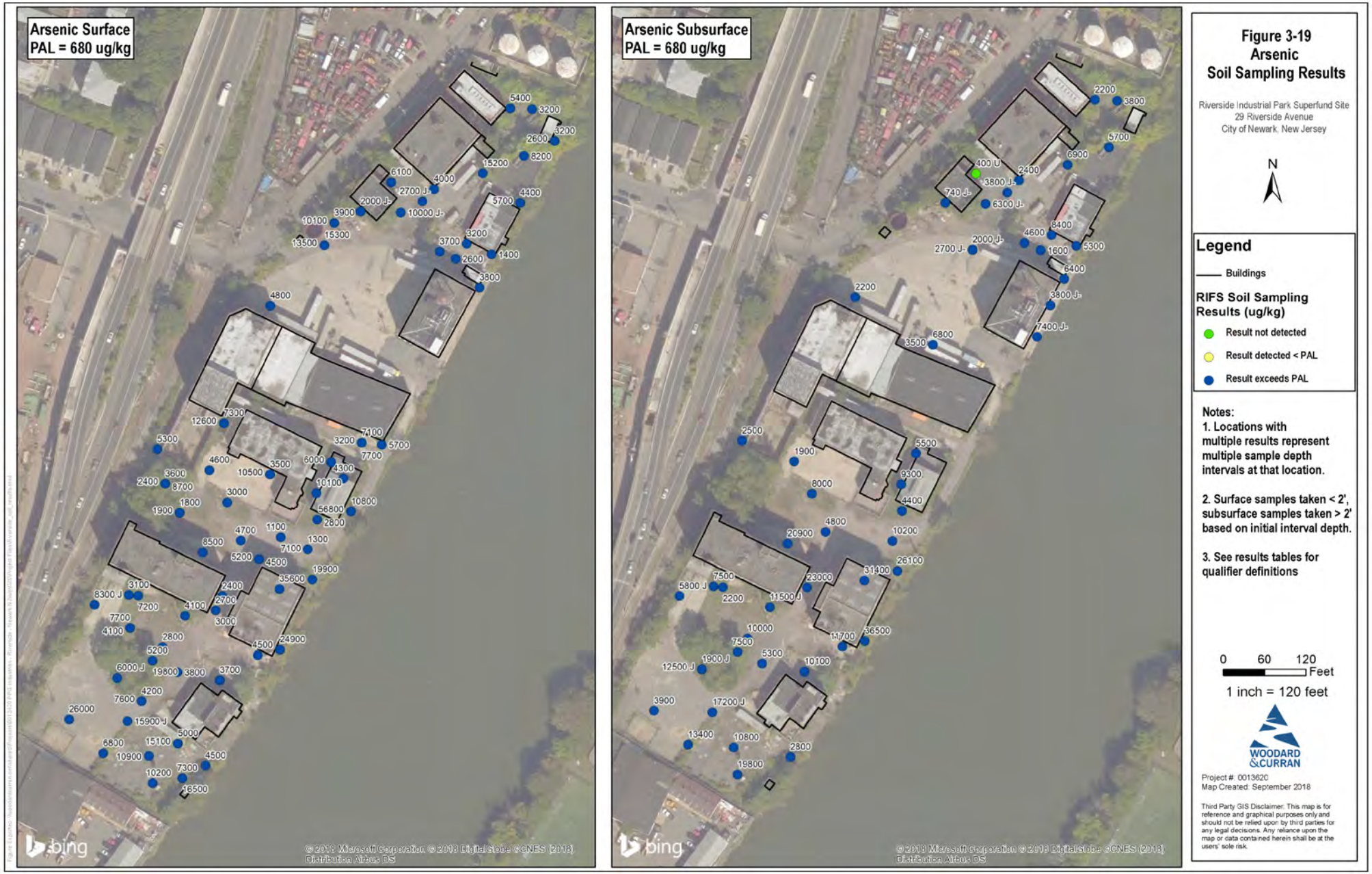
Arsenic Surface
PAL = 680 ug/kg
Arsenic Subsurface
PAL = 680 ug/kg
Figure 3-19
Arsenic
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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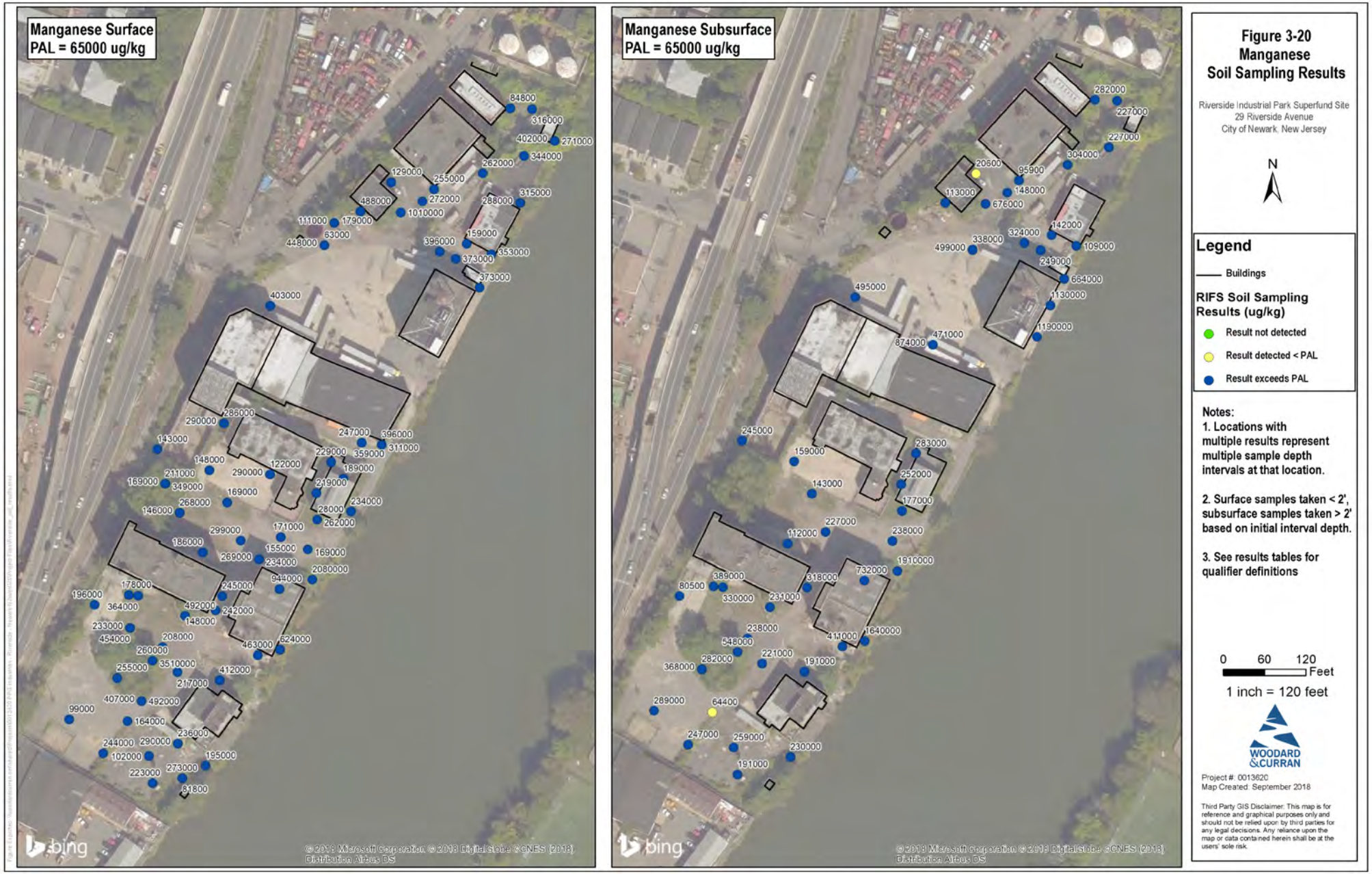
Manganese Surface
PAL = 65000 ug/kg
84800
316000
402000
271000
344000
262000
129000
255000
272000
315000
488000
1010000
288000
111000
179000
63000
448000
159000
396000
353000
373000
373000
403000
290000
286000
143000
247000
396000
311000
229000
359000
148000
122000
189000
211000
290000
169000
349000
219000
169000
268000
234000
146000
28000
262000
299000
171000
186000
155000
169000
269000
234000
2080000
944000
178000
245000
196000
364000
492000
242000
148000
233000
454000
208000
463000
624000
260000
255000
3510000
412000
217000
407000
492000
99000
164000
236000
244000
290000
102000
195000
223000
273000
81800
bing
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Distribution Airbus DS
Manganese Subsurface
PAL = 65000 ug/kg
282000
227000
227000
304000
20500
95900
113000
148000
676000
142000
324000
338000
499000
109000
249000
664000
495000
1130000
1190000
471000
874000
245000
159000
283000
252000
143000
177000
227000
112000
238000
1910000
389000
318000
732000
80500
330000
231000
238000
1640000
411000
548000
221000
282000
191000
368000
289000
64400
247000
259000
230000
191000
bing
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Distribution Airbus DS
Figure 3-20
Manganese
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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Cadmium Surface
PAL = 2000 ug/kg
Cadmium Subsurface
PAL = 2000 ug/kg
Figure 3-21
Cadmium
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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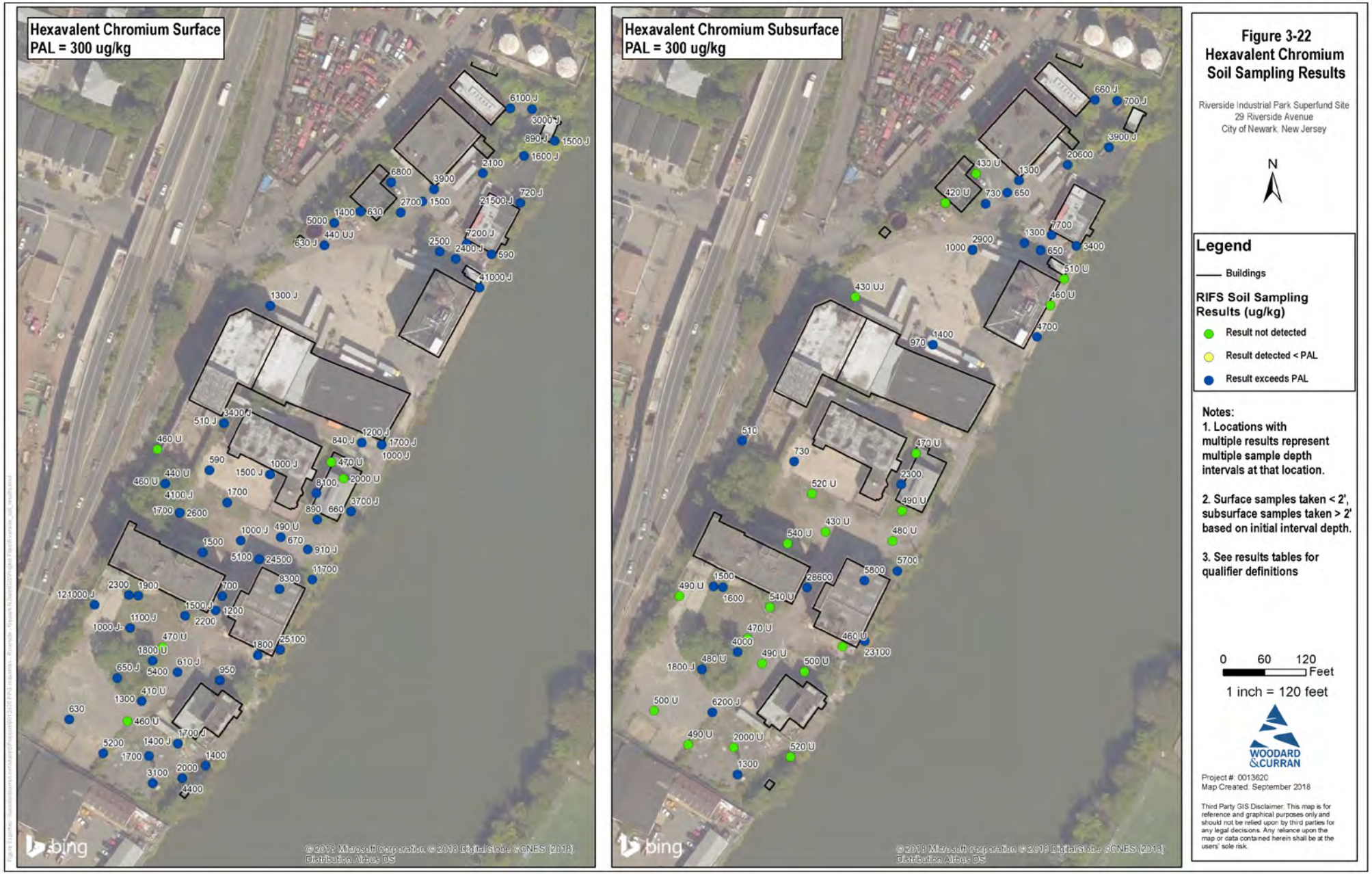
Hexavalent Chromium Surface
PAL = 300 ug/kg
Hexavalent Chromium Subsurface
PAL = 300 ug/kg
Figure 3-22
Hexavalent Chromium
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling
Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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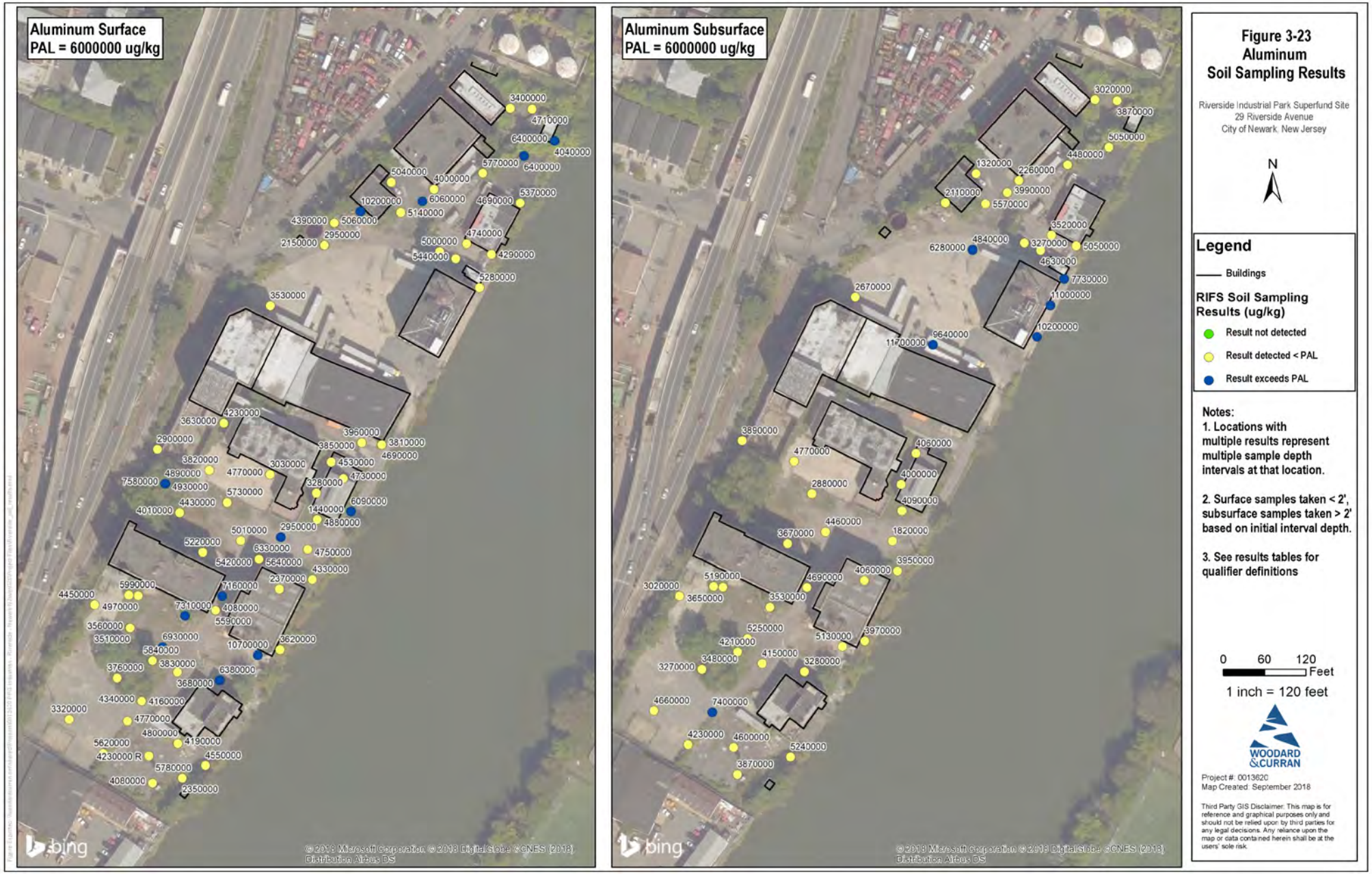
Aluminum Surface
PAL = 6000000 ug/kg
Aluminum Subsurface
PAL = 6000000 ug/kg
Figure 3-23
Aluminum
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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Zinc Surface
PAL = 930000 ug/kg
Zinc Subsurface
PAL = 930000 ug/kg
Figure 3-24
Zinc
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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Silver Surface
PAL = 1000 ug/kg
Silver Subsurface
PAL = 1000 ug/kg
Figure 3-25
Silver
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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PCB-1254 Surface
PAL = 200 ug/kg
PCB-1254 Subsurface
PAL = 200 ug/kg
Figure 3-26
PCB-1254
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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PCB-1260 Surface
PAL = 200 ug/kg
PCB-1260 Subsurface
PAL = 200 ug/kg
Figure 3-27
PCB-1260
Soil Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings
RIFS Soil Sampling Results (ug/kg)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. Locations with multiple results represent multiple sample depth intervals at that location.
2. Surface samples taken < 2', subsurface samples taken > 2' based on initial interval depth.
3. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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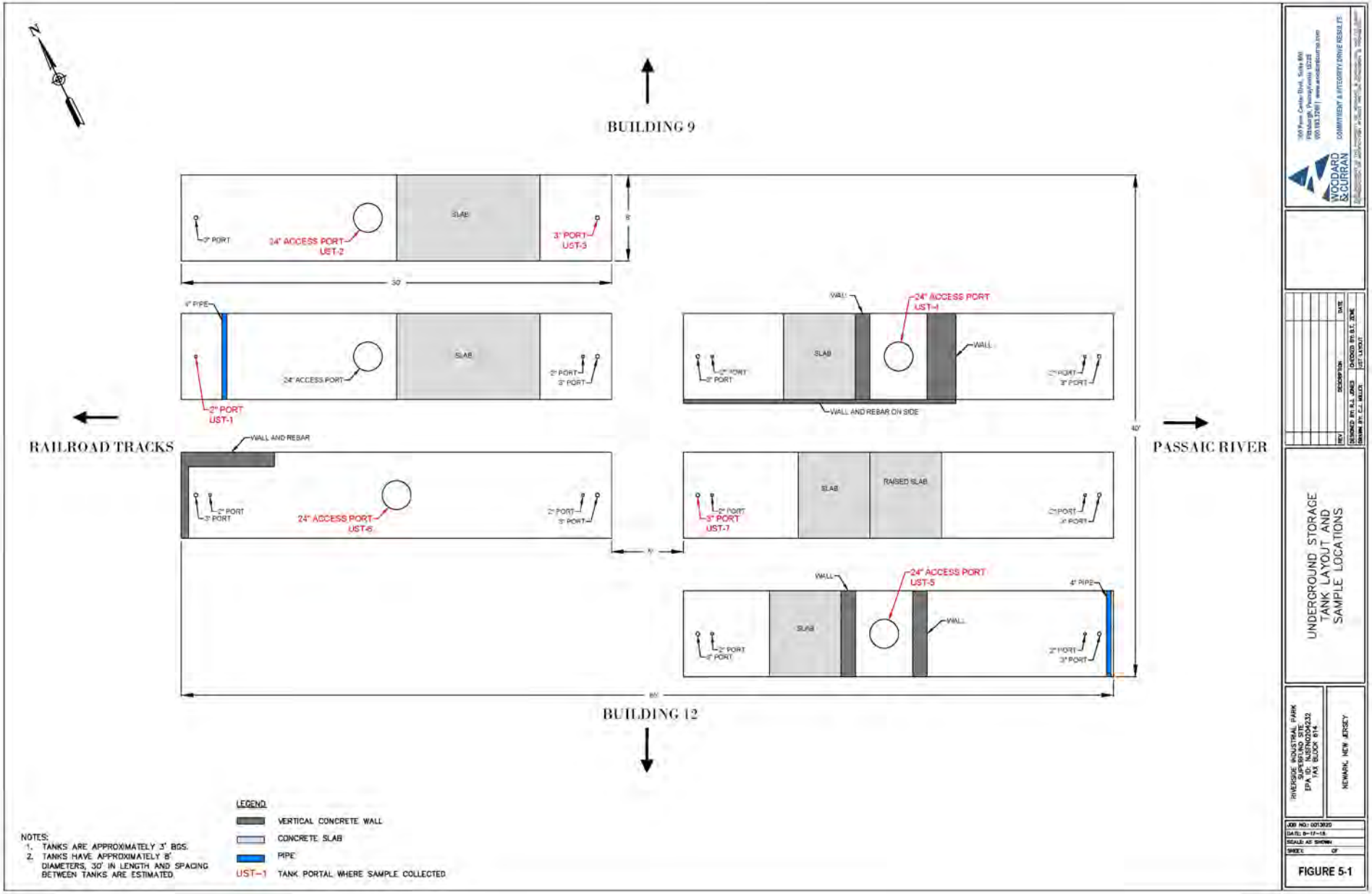
N
BUILDING 9
BUILDING 12
RAILROAD TRACKS
PASSAIC RIVER
2" PORT
3" PORT
24" ACCESS PORT
UST-2
UST-3
SLAB
30'
4" PIPE
2" PORT
UST-1
24" ACCESS PORT
WALL
24" ACCESS PORT
UST-4
WALL AND REBAR ON SIDE
WALL AND REBAR
24" ACCESS PORT
UST-6
RAISED SLAB
UST-7
24" ACCESS PORT
UST-5
40'
80'
LEGEND
VERTICAL CONCRETE WALL
CONCRETE SLAB
PIPE
UST-1 TANK PORTAL WHERE SAMPLE COLLECTED
NOTES:
1. TANKS ARE APPROXIMATELY 3' BGS.
2. TANKS HAVE APPROXIMATELY 8' DIAMETERS, 30' IN LENGTH AND SPACING BETWEEN TANKS ARE ESTIMATED.
UNDERGROUND STORAGE TANK LAYOUT AND SAMPLE LOCATIONS
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
EPA ID: NJSFN0204232
NEWARK, NEW JERSEY
FIGURE 5-1

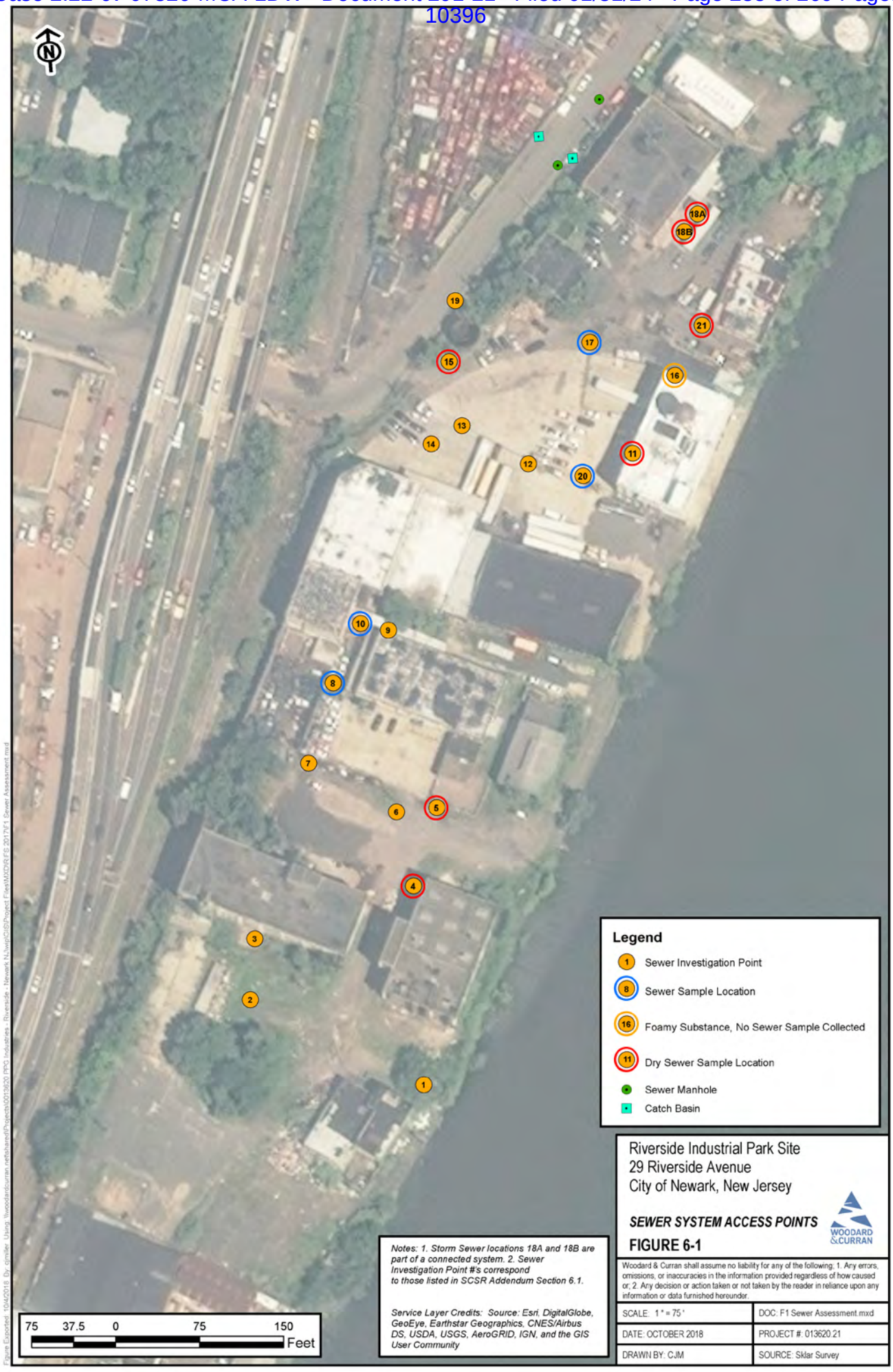
N
18A
18B
19
21
17
15
16
13
14
11
12
20
10
9
8
7
6
5
4
3
2
1
75 37.5 0 75 150
Feet
Legend
Sewer Investigation Point
Sewer Sample Location
Foamy Substance, No Sewer Sample Collected
Dry Sewer Sample Location
Sewer Manhole
Catch Basin
Notes: 1. Storm Sewer locations 18A and 18B are part of a connected system. 2. Sewer Investigation Point #'s correspond to those listed in SCSR Addendum Section 6.1.
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Riverside Industrial Park Site
29 Riverside Avenue
City of Newark, New Jersey
SEWER SYSTEM ACCESS POINTS
FIGURE 6-1
WOODARD &CURRAN
Woodard & Curran shall assume no liability for any of the following: 1. Any errors, omissions, or inaccuracies in the information provided regardless of how caused or; 2. Any decision or action taken or not taken by the reader in reliance upon any information or data furnished hereunder.
SCALE: 1 " = 75 '
DOC: F1 Sewer Assessment.mxd
DATE: OCTOBER 2018
PROJECT #: 013620.21
DRAWN BY: CJM
SOURCE: Sklar Survey

FIGURE 7-1
PIEZOMETRIC SURFACE MAP
FILL UNIT - MARCH 12, 2018
HIGH TIDE
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Legend

- River Gauges
- Existing Monitoring Wells
- RI Monitoring Wells
- Piezometric Surface Contour

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 20 40 80 Feet

WOODARD &CURRAN

Project #: 0013620
Map Created: August 2018

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

FIGURE 7-2
PIEZOMETRIC SURFACE MAP
FILL UNIT - MARCH 13, 2018
LOW TIDE
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

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FIGURE 7-3
PIEZOMETRIC SURFACE MAP
FILL UNIT - JUNE 6, 2018
HIGH TIDE
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Legend

- River Gauges
- Existing Monitoring Wells
- RI Monitoring Wells
- Piezometric Surface Contour

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 20 40 80 Feet

WOODARD &CURRAN

Project #: 0013620
Map Created: August 2018

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FIGURE 7-4
PIEZOMETRIC SURFACE MAP
FILL UNIT - JUNE 7, 2018
LOW TIDE
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
NEWARK, NEW JERSEY

Legend

- River Gauges
- Existing Monitoring Wells
- RI Monitoring Wells
- Piezometric Surface Contour

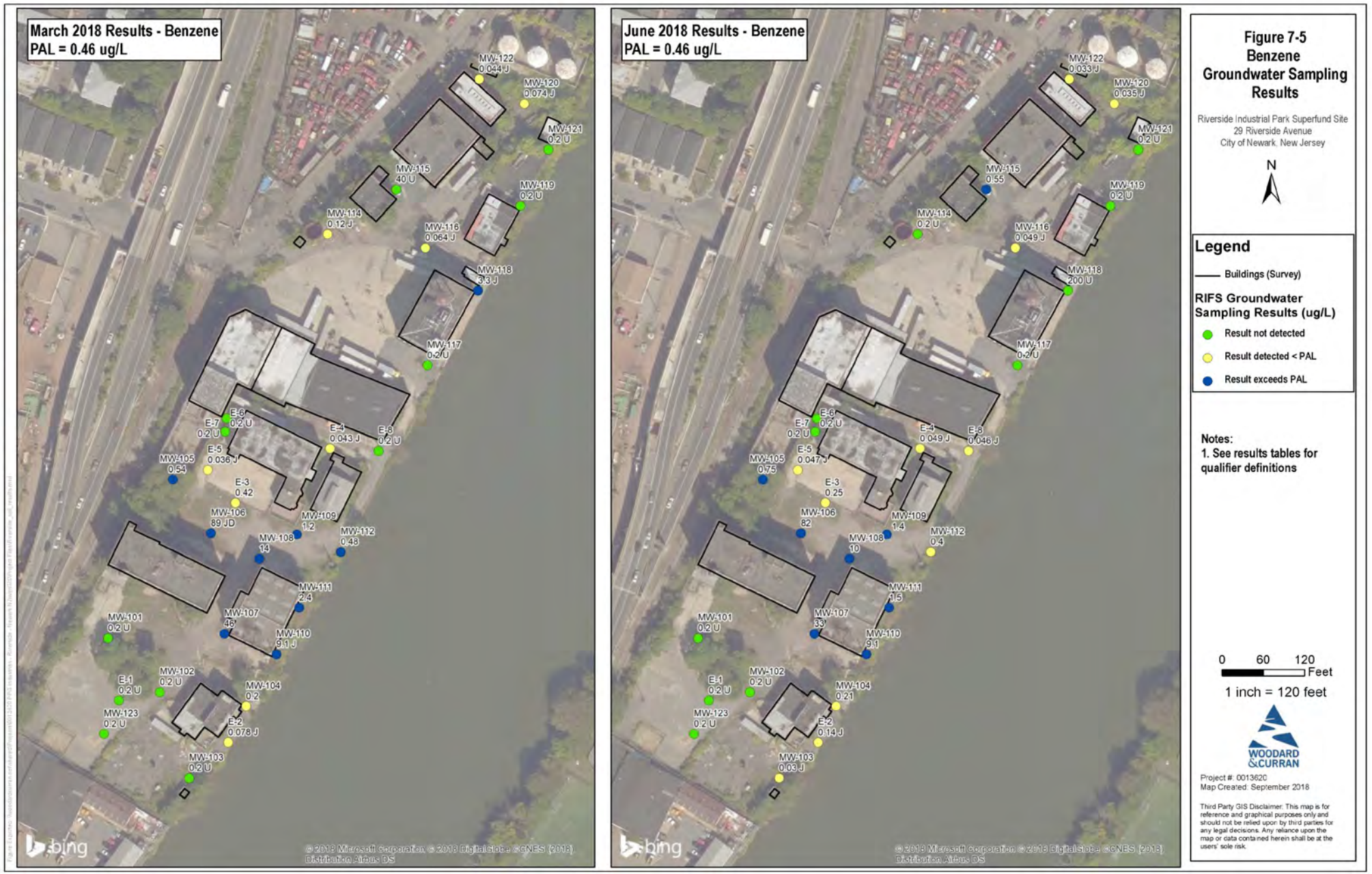
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 20 40 80 Feet

WOODARD &CURRAN

Project #: 0013620
Map Created: August 2018

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**


March 2018 Results - Benzene
PAL = 0.46 ug/L
MW-122 0.044 J
MW-120 0.074 J
MW-121 0.2 U
MW-115 40 U
MW-119 0.2 U
MW-114 0.12 J
MW-116 0.064 J
MW-118 3.3 J
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.043 J
E-8 0.2 U
E-5 0.036 J
MW-105 0.54
E-3 0.42
MW-106 89 JD
MW-109 1.2
MW-108 14
MW-112 0.48
MW-111 2.4
MW-101 0.2 U
MW-107 46
MW-110 9.1 J
MW-102 0.2 U
E-1 0.2 U
MW-104 0.2
MW-123 0.2 U
E-2 0.078 J
MW-103 0.2 U
June 2018 Results - Benzene
PAL = 0.46 ug/L
MW-122 0.033 J
MW-120 0.035 J
MW-121 0.2 U
MW-115 0.55
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.049 J
MW-118 200 U
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.049 J
E-8 0.046 J
E-5 0.047 J
MW-105 0.75
E-3 0.25
MW-106 82
MW-109 1.4
MW-108 10
MW-112 0.4
MW-111 1.5
MW-101 0.2 U
MW-107 33
MW-110 9.1
MW-102 0.2 U
E-1 0.2 U
MW-104 0.21
MW-123 0.2 U
E-2 0.14 J
MW-103 0.03 J
Figure 7-5
Benzene
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - Ethylbenzene
PAL = 1.5 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.11 J
MW-115 480 D
MW-119 0.2 U
MW-114 550
MW-116 0.055 J
MW-118 25 UJ
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.15 J
E-8 0.12 J
MW-105 0.1 J
E-5 0.2 U
E-3 0.079 J
MW-106 880 BD
MW-109 0.15 JB
MW-112 0.4
MW-108 28
MW-111 0.28
MW-101 0.12 JB
MW-107 14
MW-110 0.23
MW-102 0.2 U
E-1 0.2 U
MW-104 1.5
MW-123 0.2 U
E-2 0.11 J
MW-103 0.2 U
June 2018 Results - Ethylbenzene
PAL = 1.5 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 270
MW-119 0.2 U
MW-114 8 J-
MW-116 0.2 U
MW-118 200 U
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 0.18 J
MW-105 0.09 J
E-5 0.2 U
E-3 0.077 J
MW-106 500
MW-109 0.057 J
MW-112 0.25
MW-108 14
MW-111 0.72
MW-101 0.2 U
MW-107 24
MW-110 0.2
MW-102 0.2 U
E-1 0.2 U
MW-104 2.2
MW-123 0.2 U
E-2 0.2 U
MW-103 0.2 U
Figure 7-6
Ethylbenzene
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - Vinyl Chloride
PAL = 0.019 ug/L
June 2018 Results - Vinyl Chloride
PAL = 0.019 ug/L
Figure 7-7
Vinyl Chloride
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater
Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for
qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.
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March 2018 Results - 1,1,2-Trichloroethane
PAL = 0.28 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.08 J
MW-115 0.2 U
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.2 UJ
MW-118 20 UJ
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 4.2
E-5 0.2 U
MW-105 0.2 U
E-3 4
MW-106 0.2 U
MW-109 0.2 U
MW-112 0.2 U
MW-108 0.2 U
MW-111 0.2 U
MW-101 0.2 U
MW-107 0.2 U
MW-110 0.17 J
MW-102 0.2 U
E-1 0.26
MW-104 0.2 U
MW-123 0.2 U
E-2 0.2 U
MW-103 0.2 U
June 2018 Results - 1,1,2-Trichloroethane
PAL = 0.28 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 0.2 U
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.2 U
MW-118 200 U
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 5.6
E-5 0.2 U
MW-105 0.2 U
E-3 3.4
MW-106 0.64
MW-109 0.2 U
MW-112 0.2 U
MW-108 3.9
MW-111 0.2 U
MW-101 0.2 U
MW-107 0.26
MW-110 0.29
MW-102 0.2 U
E-1 0.2 U
MW-104 0.2 U
MW-123 0.2 U
E-2 0.2 U
MW-103 0.2 U
Figure 7-8
1,1,2-Trichloroethane Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - 1,1,2,2-Tetrachloroethane
PAL = 0.076 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 0.2 U
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.2 UJ
MW-118 20 UJ
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 0.43
E-5 0.2 U
MW-105 0.2 U
E-3 0.2 U
MW-106 0.2 U
MW-109 0.2 U
MW-112 0.2 U
MW-108 0.2 U
MW-111 0.2 U
MW-101 0.2 U
MW-107 0.2 U
MW-110 0.2 U
MW-102 0.2 U
E-1 0.39
MW-104 0.2 U
MW-123 0.087 J
E-2 0.2 U
MW-103 0.2 U
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June 2018 Results - 1,1,2,2-Tetrachloroethane
PAL = 0.076 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 0.2 U
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.2 U
MW-118 200 U
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 0.52
E-5 0.2 U
MW-105 0.2 U
E-3 0.2 U
MW-106 0.2 U
MW-109 0.2 U
MW-112 0.2 U
MW-108 0.2 U
MW-111 0.2 U
MW-101 0.2 U
MW-107 0.28
MW-110 0.2 U
MW-102 0.2 U
E-1 0.56
MW-104 0.2 U
MW-123 0.2 U
E-2 0.2 U
MW-103 0.2 U
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Figure 7-9
1,1,2,2-Tetrachloroethane Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - Trichloroethene
PAL = 0.49 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 0.6
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.2 UJ
MW-118 20 UJ
MW-117 0.2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 0.2 U
E-5 0.2 U
MW-105 0.079 J
E-3 0.2 U
MW-106 35
MW-109 0.2 U
MW-112 0.2 U
MW-108 0.2 U
MW-111 0.2 U
MW-101 0.2 U
MW-107 0.55
MW-110 0.2 U
MW-102 0.2 U
E-1 0.2 U
MW-104 0.2 U
MW-123 0.2 U
E-2 0.2 U
MW-103 0.2 U
June 2018 Results - Trichloroethene
PAL = 0.49 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 0.39
MW-119 0.2 U
MW-114 0.2 U
MW-116 0.2 U
MW-118 200 U
MW-117 0.2 U
E-6 0.11 J
E-7 0.1 J
E-4 0.2 U
E-8 0.2 U
E-5 0.2 U
MW-105 0.1 J
E-3 0.2 U
MW-106 11
MW-109 0.2 U
MW-112 0.2 U
MW-108 0.2 U
MW-111 0.17 J
MW-101 0.2 U
MW-107 0.59
MW-110 0.2 U
MW-102 0.2 U
E-1 0.2 U
MW-104 0.2 U
MW-123 0.2 U
E-2 0.2 U
MW-103 0.13 J
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Figure 7-10
Trichloroethene Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.

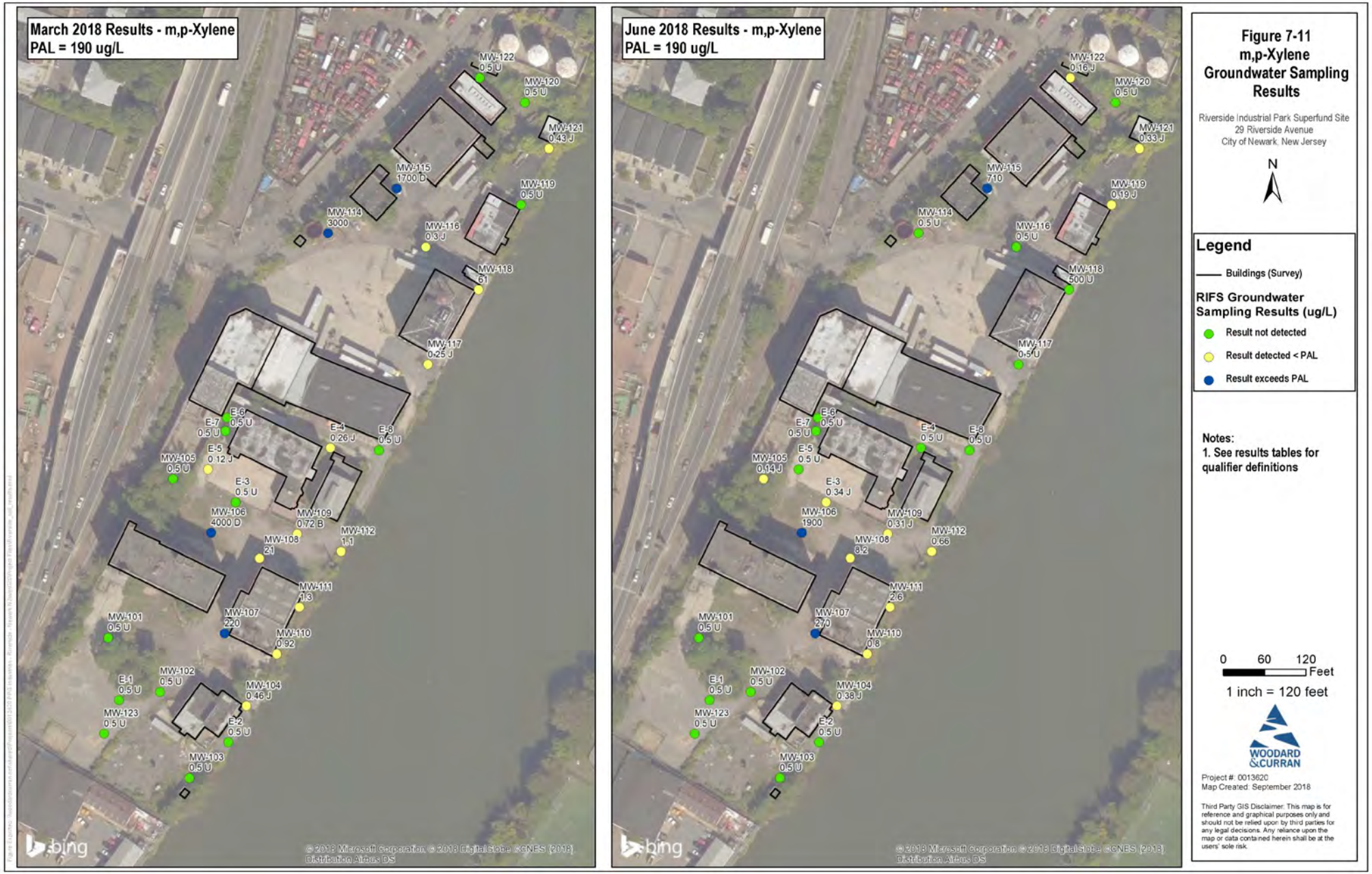
March 2018 Results - m,p-Xylene
PAL = 190 ug/L
MW-122 0.5 U
MW-120 0.5 U
MW-121 0.43 J
MW-115 1700 D
MW-119 0.5 U
MW-114 3000
MW-116 0.3 J
MW-118 61
MW-117 0.25 J
E-6 0.5 U
E-7 0.5 U
E-4 0.26 J
E-8 0.5 U
E-5 0.12 J
MW-105 0.5 U
E-3 0.5 U
MW-106 4000 D
MW-109 0.72 B
MW-112 1.1
MW-108 21
MW-111 1.3
MW-101 0.5 U
MW-107 220
MW-110 0.92
E-1 0.5 U
MW-102 0.5 U
MW-104 0.46 J
MW-123 0.5 U
E-2 0.5 U
MW-103 0.5 U
June 2018 Results - m,p-Xylene
PAL = 190 ug/L
MW-122 0.16 J
MW-120 0.5 U
MW-121 0.33 J
MW-115 710
MW-119 0.19 J
MW-114 0.5 U
MW-116 0.5 U
MW-118 500 U
MW-117 0.5 U
E-6 0.5 U
E-7 0.5 U
E-4 0.5 U
E-8 0.5 U
E-5 0.5 U
MW-105 0.14 J
E-3 0.34 J
MW-106 1900
MW-109 0.31 J
MW-112 0.66
MW-108 82
MW-111 2.6
MW-101 0.5 U
MW-107 270
MW-110 0.8
E-1 0.5 U
MW-102 0.5 U
MW-104 0.38 J
MW-123 0.5 U
E-2 0.5 U
MW-103 0.5 U
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Figure 7-11
m,p-Xylene Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - o-Xylene
PAL = 190 ug/L
MW-122 0.5 U
MW-120 0.5 U
MW-121 0.5 U
MW-115 810 D
MW-119 0.5 U
MW-114 360
MW-116 0.5 UJ
MW-118 24 J
MW-117 0.5 U
E-6 0.5 U
E-7 0.5 U
E-4 0.4 J
E-8 0.62 J
E-5 0.5 U
MW-105 0.21 J
E-3 0.48 J
MW-106 360 JBD
MW-109 0.58 B
MW-112 1.3
MW-108 19
MW-111 8.9
MW-107 28
MW-101 0.17 JB
MW-110 1
MW-102 0.5 U
E-1 0.5 U
MW-104 0.19 J
MW-123 0.5 U
E-2 0.17 J
MW-103 0.5 U
June 2018 Results - o-Xylene
PAL = 190 ug/L
MW-122 0.17 J
MW-120 0.5 U
MW-121 0.22 J
MW-115 340
MW-119 0.16 J
MW-114 0.5 U
MW-116 0.23 J
MW-118 500 U
MW-117 0.5 U
E-6 0.5 U
E-7 0.5 U
E-4 0.5 U
E-8 0.28 J
E-5 0.15 J
MW-105 0.23 J
E-3 0.65
MW-106 170
MW-109 0.5 U
MW-112 0.65
MW-108 12
MW-111 8.9
MW-101 0.5 U
MW-107 47
MW-110 2
E-1 0.2 J
MW-102 0.5 U
MW-104 0.5 U
MW-123 0.5 U
E-2 0.5 U
MW-103 0.5 U
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Figure 7-12
o-Xylene
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - Benzo(a)Anthracene
PAL = 0.03 ug/L
MW-122 0.1 U
MW-120 0.011 J
MW-121 0.029 J
MW-115 10 U
MW-119 0.0065 J
MW-114 0.5 U
MW-116 0.033 J
MW-118 5 U
MW-117 0.99 U
E-6 0.0057 J
E-7 0.0036 J
E-4 0.099 U
E-8 0.098 U
E-5 0.016 J
MW-105 0.0053 J
E-3 0.49 U
MW-106 2 U
MW-109 0.021 J
MW-112 0.1 U
MW-108 0.076 J
MW-111 0.011 J
MW-101 0.098 U
MW-107 0.98 U
MW-110 0.98 U
E-1 0.0055 J
MW-102 0.049 J
MW-104 0.052 J
MW-123 0.005 J
E-2 0.088 J
MW-103 0.033 J
June 2018 Results - Benzo(a)Anthracene
PAL = 0.03 ug/L
MW-122 0.096 U
MW-120 0.015 J
MW-121 0.024 J
MW-115 9.5 U
MW-119 0.039 J
MW-114 9.4 U
MW-116 0.041 J
MW-118 0.3 J
MW-117 0.0037 J
E-6 0.019 J
E-7 0.1 U
E-4 0.5 U
E-8 0.2 U
E-5 0.48 U
MW-105 0.19 U
E-3 1.9 U
MW-106 9.6 U
MW-109 0.023 J
MW-112 2 U
MW-108 1.9 U
MW-111 1 U
MW-101 0.098 U
MW-107 10 U
MW-110 10 U
E-1 0.0061 J
MW-102 0.012 J
MW-104 0.11 J
MW-123 0.0035 J
E-2 0.014 J
MW-103 0.1 UJ
Figure 7-13
Benzo(a)Anthracene Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.
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March 2018 Results - Benzo(a)Pyrene
PAL = 0.025 ug/L
MW-122 0.1 U
MW-120 0.1 U
MW-121 0.1 U
MW-115 10 U
MW-119 0.1 U
MW-114 0.5 U
MW-116 0.1 U
MW-118 5 U
MW-117 0.99 U
E-6 0.098 U
E-7 0.1 U
E-4 0.099 U
E-8 0.098 U
E-5 0.33 U
MW-105 0.098 U
E-3 0.49 U
MW-106 2 U
MW-109 0.017 J
MW-112 0.1 U
MW-108 0.13 J
MW-111 0.2 U
MW-101 0.098 U
MW-107 0.98 U
MW-110 0.98 U
E-1 0.099 U
MW-102 0.064 J
MW-104 0.044 J
MW-123 0.099 U
E-2 0.13
MW-103 0.038 J
June 2018 Results - Benzo(a)Pyrene
PAL = 0.025 ug/L
MW-122 0.096 U
MW-120 0.096 U
MW-121 0.094 U
MW-115 9.5 U
MW-119 0.093 U
MW-114 9.4 U
MW-116 0.094 U
MW-118 5.2 U
MW-117 0.095 U
E-6 0.025 J
E-7 0.1 U
E-4 0.5 U
E-8 0.2 U
E-5 0.48 U
MW-105 0.19 U
E-3 1.9 U
MW-106 9.6 U
MW-109 0.48 U
MW-112 2 U
MW-108 1.9 U
MW-111 1 U
MW-101 0.098 U
MW-107 10 U
MW-110 10 U
E-1 0.2 U
MW-102 0.012 J
MW-104 0.12 J
MW-123 0.098 U
E-2 0.099 U
MW-103 0.1 UJ
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Figure 7-14
Benzo(a)Pyrene Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
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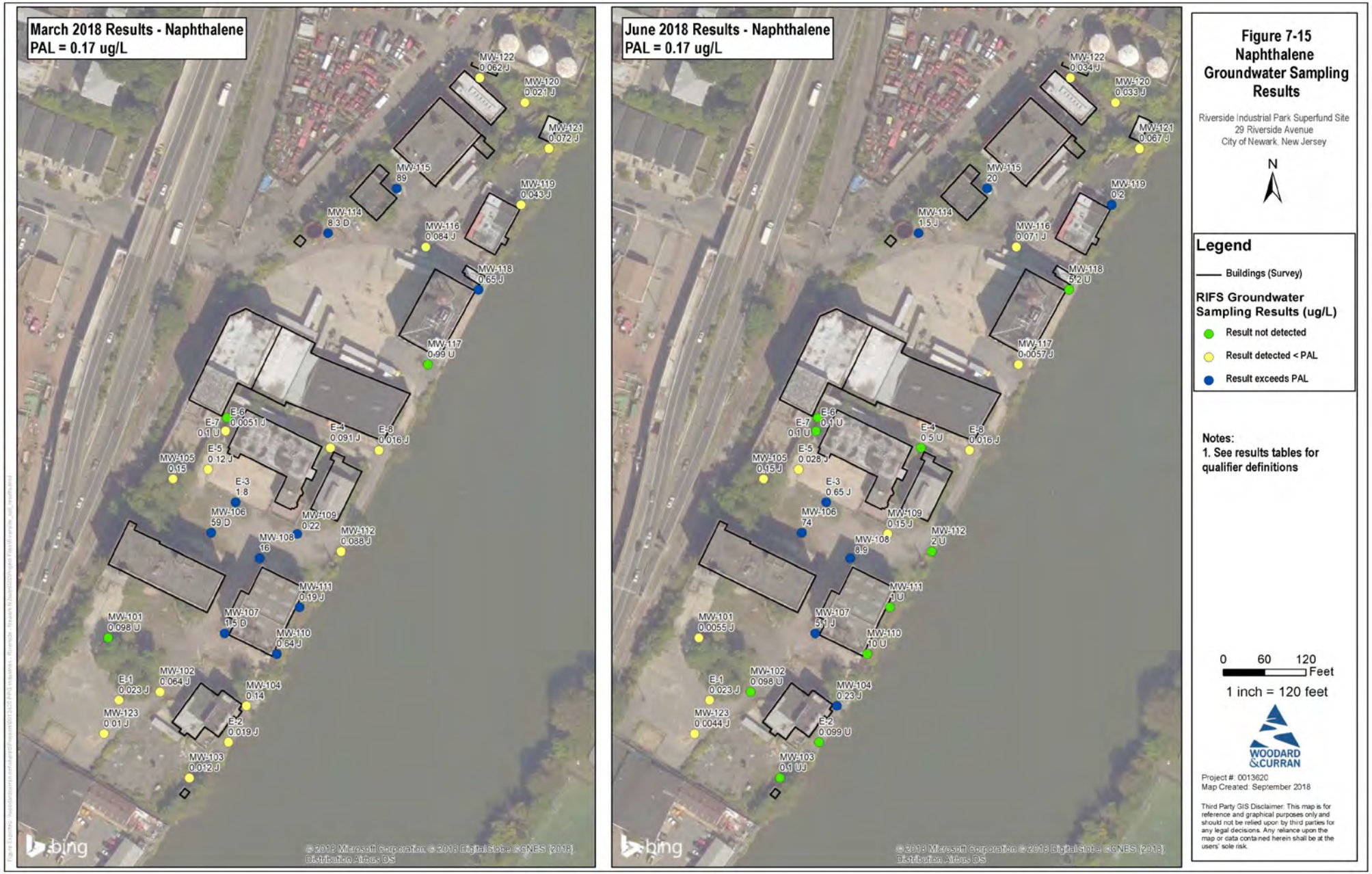
March 2018 Results - Naphthalene
PAL = 0.17 ug/L
MW-122 0.062 J
MW-120 0.021 J
MW-121 0.072 J
MW-115 89
MW-119 0.043 J
MW-114 8.3 D
MW-116 0.084 J
MW-118 0.65 J
MW-117 0.99 U
E-6 0.0051 J
E-7 0.1 U
E-4 0.091 J
E-8 0.016 J
E-5 0.12 J
MW-105 0.15
E-3 1.8
MW-106 59 D
MW-109 0.22
MW-108 16
MW-112 0.088 J
MW-111 0.19 J
MW-101 0.098 U
MW-107 1.5 D
MW-110 0.64 J
E-1 0.023 J
MW-102 0.064 J
MW-104 0.14
MW-123 0.01 J
E-2 0.019 J
MW-103 0.012 J
June 2018 Results - Naphthalene
PAL = 0.17 ug/L
MW-122 0.034 J
MW-120 0.033 J
MW-121 0.067 J
MW-115 20
MW-119 0.2
MW-114 1.5 J
MW-116 0.071 J
MW-118 5.2 U
MW-117 0.0057 J
E-6 0.1 U
E-7 0.1 U
E-4 0.5 U
E-8 0.016 J
E-5 0.028 J
MW-105 0.15 J
E-3 0.65 J
MW-106 74
MW-109 0.15 J
MW-112 2 U
MW-108 8.9
MW-111 1 U
MW-101 0.0055 J
MW-107 5.1 J
MW-110 10 U
E-1 0.023 J
MW-102 0.098 U
MW-104 0.23 J
MW-123 0.0044 J
E-2 0.099 U
MW-103 0.1 UJ
Figure 7-15
Naphthalene
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater
Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for
qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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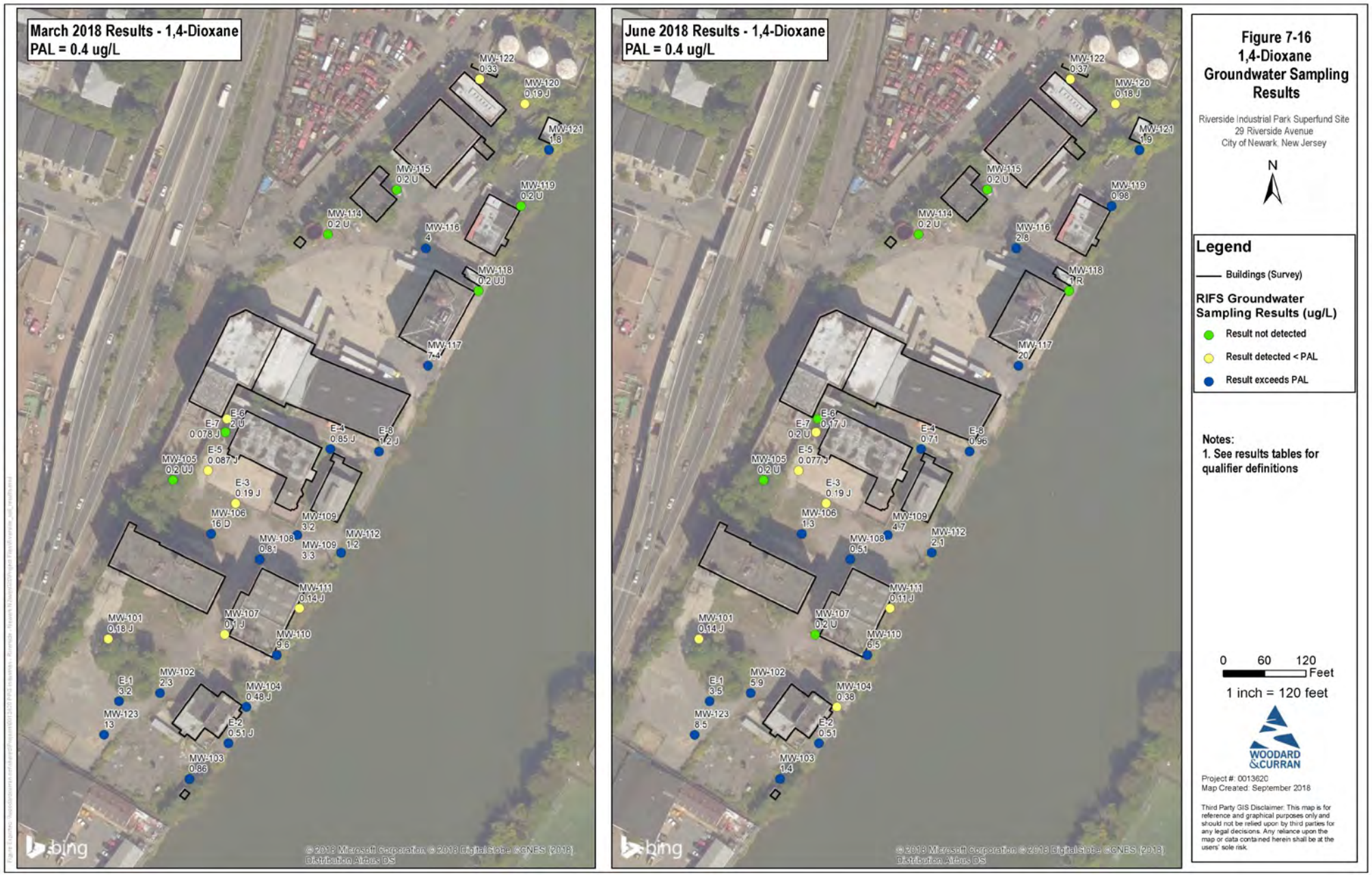
March 2018 Results - 1,4-Dioxane
PAL = 0.4 ug/L
MW-122 0.33
MW-120 0.19 J
MW-121 18
MW-115 0.2 U
MW-119 0.2 U
MW-114 0.2 U
MW-116 4
MW-118 0.2 UJ
MW-117 7.4
E-6 2 U
E-7 0.078 J
E-4 0.85 J
E-8 1.2 J
E-5 0.087 J
MW-105 0.2 UJ
E-3 0.19 J
MW-106 16 D
MW-109 3.2
MW-108 0.81
MW-109 3.3
MW-112 1.2
MW-111 0.14 J
MW-101 0.18 J
MW-107 0.1 J
MW-110 9.6
E-1 3.2
MW-102 2.3
MW-104 0.48 J
MW-123 13
E-2 0.51 J
MW-103 0.86
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June 2018 Results - 1,4-Dioxane
PAL = 0.4 ug/L
MW-122 0.37
MW-120 0.18 J
MW-121 19
MW-115 0.2 U
MW-119 0.98
MW-114 0.2 U
MW-116 2.8
MW-118 TR
MW-117 20
E-6 0.17 J
E-7 0.2 U
E-4 0.71
E-8 0.96
E-5 0.077 J
MW-105 0.2 U
E-3 0.19 J
MW-106 1.3
MW-109 4.7
MW-108 0.51
MW-112 2.1
MW-111 0.11 J
MW-101 0.14 J
MW-107 0.2 U
MW-110 6.5
E-1 3.5
MW-102 5.9
MW-104 0.38
MW-123 8.5
E-2 0.51
MW-103 1.4
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Figure 7-16
1,4-Dioxane
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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March 2018 Results - Pentachlorophenol
PAL = 0.041 ug/L
MW-122 0.2 U
MW-120 0.2 U
MW-121 0.2 U
MW-115 2.1 U
MW-119 0.2 U
MW-114 0.99 U
MW-116 0.2 U
MW-118 10 U
MW-117 2 U
E-6 0.2 U
E-7 0.2 U
E-4 0.2 U
E-8 0.2 U
E-5 0.66 U
MW-105 0.2 U
E-3 0.97 U
MW-106 3.9 U
MW-109 0.18 J
MW-112 0.2 U
MW-108 2 U
MW-111 0.39 U
MW-101 0.2 U
MW-107 2 U
MW-110 2 U
MW-102 0.2 U
E-1 0.2 U
MW-104 0.2 U
MW-123 0.2 U
E-2 0.19 U
MW-103 0.19 U
June 2018 Results - Pentachlorophenol
PAL = 0.041 ug/L
MW-122 0.19 UJ
MW-120 0.19 UJ
MW-121 0.19 UJ
MW-115 19 UJ
MW-119 0.19 UJ
MW-114 19 UJ
MW-116 0.19 UJ
MW-118 10 UJ
MW-117 0.19 UJ
E-6 0.2 UJ
E-7 0.2 UJ
E-4 0.99 UJ
E-8 0.39 UJ
E-5 0.96 UJ
MW-105 0.38 UJ
E-3 3.9 UJ
MW-106 19 UJ
MW-109 0.96 UJ
MW-112 4 UJ
MW-108 3.8 UJ
MW-111 2 UJ
MW-101 0.2 U
MW-107 2 UJ
MW-110 20 UJ
MW-102 0.2 UJ
E-1 0.39 UJ
MW-104 2 UJ
MW-123 0.2 UJ
E-2 0.2 UJ
MW-103 0.2 UJ
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Figure 7-17
Pentachlorophenol Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.


March 2018 Results - Lead
PAL = 5 ug/L
MW-122 7
MW-120 25.3
MW-121 4.2
MW-115 1 U
MW-119 6.5
MW-114 1 U
MW-116 1.6
MW-118 568
MW-117 8.9
E-6 2
E-7 2
E-4 7.1
E-8 0.65 J
E-5 1.4
MW-105 14.7
E-3 1.7
MW-106 12.8
MW-109 20.7
MW-108 15.4
MW-112 0.83 J
MW-111 4.9
MW-101 1 U
MW-107 38.4
MW-110 3.3
E-1 1.3
MW-102 12.8
MW-104 7.8
MW-123 1.2
E-2 3.7
MW-103 4.5
June 2018 Results - Lead
PAL = 5 ug/L
MW-122 3.6 J
MW-120 12.6 J
MW-121 2.6 J
MW-115 1 UJ
MW-119 7.9 J
MW-114 0.28 J
MW-116 2 J
MW-118 26
MW-117 1.9 J
E-6 3.3
E-7 1.4
E-4 7.4
E-8 1 U
E-5 0.55 J
MW-105 36.5
E-3 2.1
MW-106 26.5
MW-109 14.6
MW-108 6.1
MW-112 8.2
MW-111 10.7
MW-101 1 U
MW-107 39.2
MW-110 6.6
E-1 1.1
MW-102 5.3
MW-104 10.4
MW-123 1 U
E-2 0.43 J
MW-103 18.7
Figure 7-18
Lead
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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March 2018 Results - Arsenic
PAL = 0.052 ug/L
MW-122 8.5
MW-120 10.1
MW-121 7.2
MW-115 5.2
MW-119 2.2
MW-114 2
MW-116 21.7
MW-118 14.2
MW-117 8
E-6 4.8
E-7 5.7
E-4 9.1
E-8 7.2
E-5 12.1
MW-105 10.1
E-3 11.7
MW-106 38.6
MW-109 9.7
MW-112 5.1
MW-108 6.8
MW-111 8.1
MW-101 13.2
MW-107 10.1
MW-110 19
MW-102 10.3
E-1 5.5
MW-104 11.9
MW-123 8.7
E-2 10.6
MW-103 7.3
June 2018 Results - Arsenic
PAL = 0.052 ug/L
MW-122 7.1
MW-120 7.3
MW-121 5.3
MW-115 2.6
MW-119 6.2
MW-114 1.6
MW-116 16.2
MW-118 7.3
MW-117 5.2
E-6 3.2
E-7 4.8
E-4 2.6
E-8 3.1 J
E-5 4.9 J
MW-105 5.2 J
E-3 4.9 J
MW-106 28 J
MW-109 8 J
MW-112 6.7
MW-108 5.4 J
MW-111 4.1
MW-101 5.1 J
MW-107 6.7
MW-110 10.9
MW-102 5.9
E-1 3.5 J
MW-104 4.8
MW-123 5.1 J
E-2 3.2
MW-103 5.1
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Figure 7-19
Arsenic
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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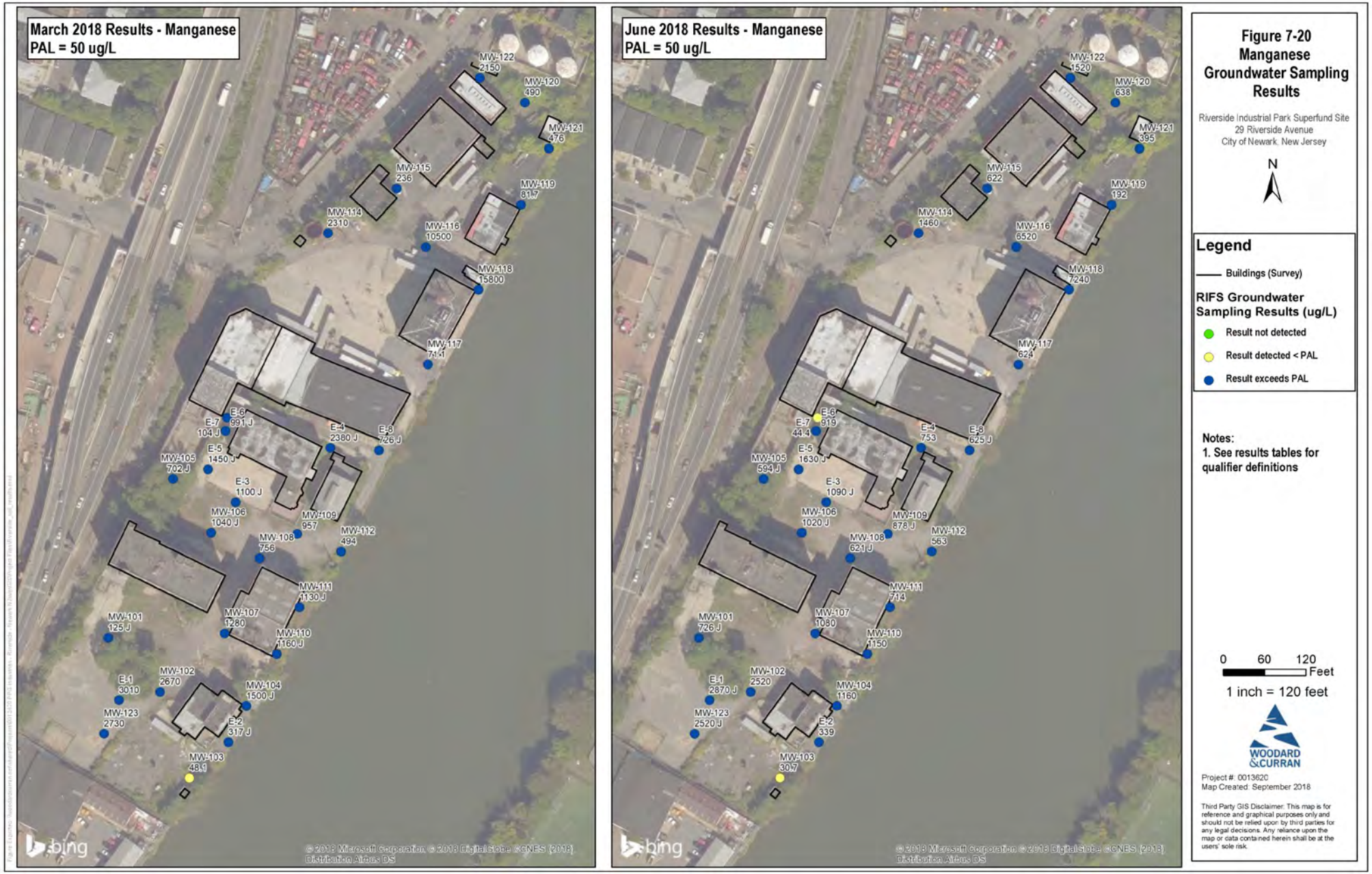
March 2018 Results - Manganese
PAL = 50 ug/L
MW-122 2150
MW-120 490
MW-121 476
MW-115 236
MW-119 81.7
MW-114 2310
MW-116 10500
MW-118 15800
MW-117 714
E-6 991 J
E-7 104 J
E-4 2380 J
E-8 726 J
E-5 1450 J
MW-105 702 J
E-3 1100 J
MW-106 1040 J
MW-109 957
MW-112 494
MW-108 756
MW-111 1130 J
MW-101 125 J
MW-107 1280
MW-110 1160 J
E-1 3010
MW-102 2670
MW-104 1500 J
MW-123 2730
E-2 317 J
MW-103 48.1
June 2018 Results - Manganese
PAL = 50 ug/L
MW-122 1520
MW-120 638
MW-121 395
MW-115 622
MW-119 192
MW-114 1460
MW-116 6520
MW-118 7240
MW-117 624
E-6 919
E-7 44.4
E-4 753
E-8 625 J
E-5 1630 J
MW-105 594 J
E-3 1090 J
MW-106 1020 J
MW-109 878 J
MW-112 563
MW-108 621 J
MW-111 714
MW-101 726 J
MW-107 1080
MW-110 1150
E-1 2870 J
MW-102 2520
MW-104 1160
MW-123 2520 J
E-2 339
MW-103 30.7
Figure 7-20
Manganese Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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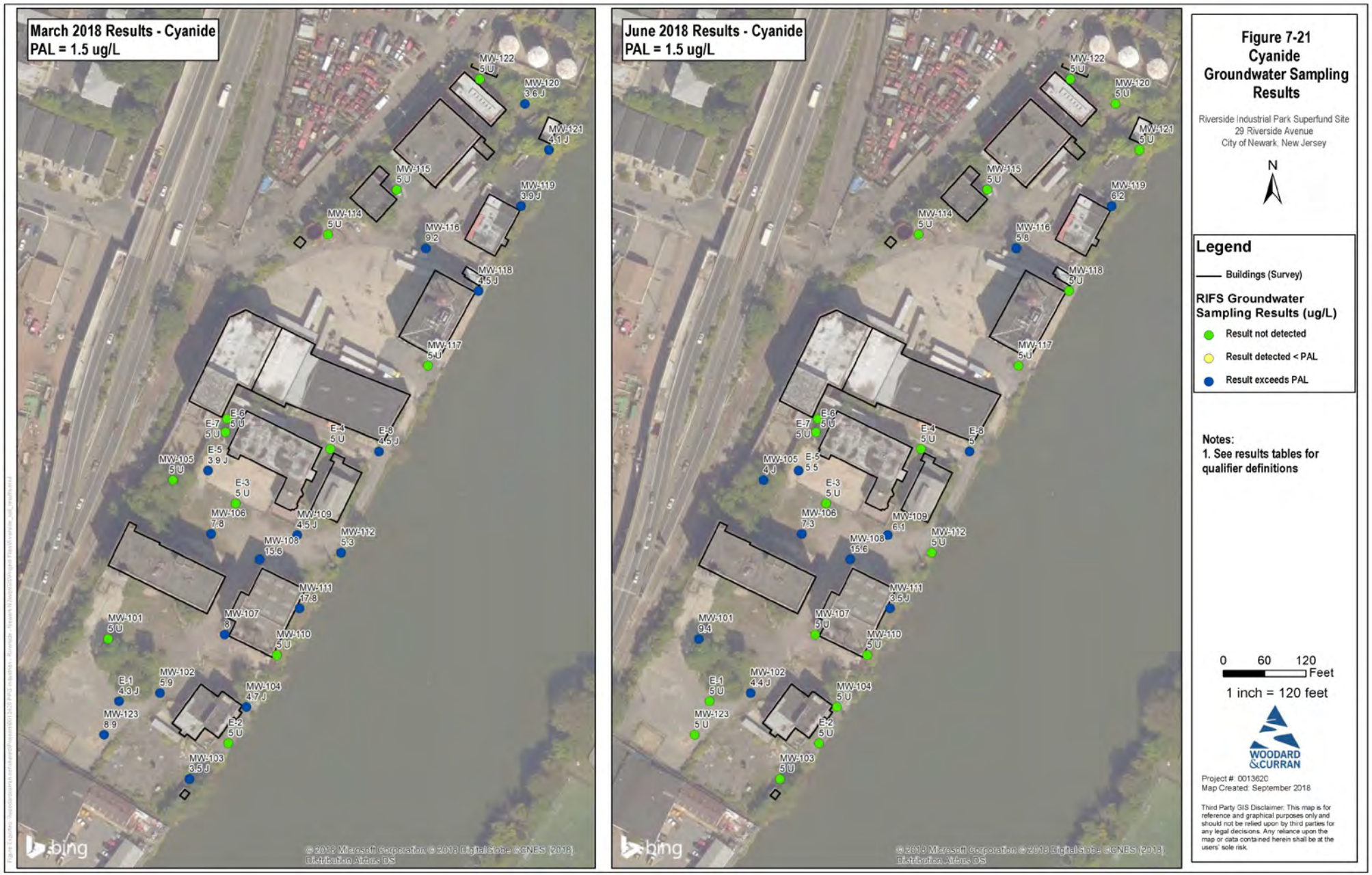
March 2018 Results - Cyanide
PAL = 1.5 ug/L
MW-122 5 U
MW-120 3.6 J
MW-121 4.1 J
MW-115 5 U
MW-119 3.9 J
MW-114 5 U
MW-116 9.2
MW-118 4.5 J
MW-117 5 U
E-6 5 U
E-7 5 U
E-4 5 U
E-8 4.5 J
E-5 3.9 J
MW-105 5 U
E-3 5 U
MW-106 7.8
MW-109 4.5 J
MW-112 5.3
MW-108 15.6
MW-111 17.8
MW-101 5 U
MW-107 8
MW-110 5 U
E-1 4.3 J
MW-102 5.9
MW-104 4.7 J
MW-123 8.9
E-2 5 U
MW-103 3.5 J
June 2018 Results - Cyanide
PAL = 1.5 ug/L
MW-122 5 U
MW-120 5 U
MW-121 5 U
MW-115 5 U
MW-119 6.2
MW-114 5 U
MW-116 5.8
MW-118 5 U
MW-117 5 U
E-6 5 U
E-7 5 U
E-4 5 U
E-8 5
MW-105 4 J
E-5 5.5
E-3 5 U
MW-106 7.3
MW-109 6.1
MW-112 5 U
MW-108 15.6
MW-111 3.5 J
MW-101 9.4
MW-107 5 U
MW-110 5 U
E-1 5 U
MW-102 4.4 J
MW-104 5 U
MW-123 5 U
E-2 5 U
MW-103 5 U
Figure 7-21
Cyanide
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater
Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for
qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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March 2018 Results - Cobalt
PAL = 6 ug/L
MW-122 0.87 J
MW-120 1.8
MW-121 0.26 J
MW-115 4.8
MW-119 0.84 J
MW-114 0.15 J
MW-116 1.5
MW-118 20.4
MW-117 0.51 J
E-6 0.23 J
E-7 0.26 J
E-4 4
E-8 0.65 J
E-5 0.88 J
MW-105 10.3
E-3 0.71 J
MW-106 14
MW-109 2.6
MW-112 0.73 J
MW-108 1.3
MW-111 0.31 J
MW-101 0.71 J
MW-107 4.6
MW-110 1.1
E-1 0.46 J
MW-102 8.7
MW-104 0.61 J
MW-123 1.2
E-2 0.5 J
MW-103 1.4
June 2018 Results - Cobalt
PAL = 6 ug/L
MW-122 0.38 J
MW-120 1.1
MW-121 0.22 J
MW-115 2.7
MW-119 0.25 J
MW-114 0.18 J
MW-116 0.94 J
MW-118 3.1
MW-117 0.5 J
E-7 0.24 J
E-6 1
E-4 1
E-8 0.41 J
E-5 0.65 J
MW-105 4.4
E-3 0.71 J
MW-106 5.6
MW-109 0.93 J
MW-112 2.5
MW-108 1.8
MW-111 0.3 J
MW-101 1.2
MW-107 1.5
MW-110 0.76 J
E-1 0.42 J
MW-102 0.93 J
MW-104 0.39 J
MW-123 0.48 J
E-2 0.44 J
MW-103 1.8
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Figure 7-22
Cobalt
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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March 2018 Results - Selenium
PAL = 40 ug/L
MW-122 11.2
MW-120 22.5
MW-121 21
MW-115 3.1 J
MW-119 6.8
MW-114 6.2
MW-116 79.8
MW-118 29.1
MW-117 8.7
E-6 15.7
E-7 19.7
E-4 25.3
E-8 24.5
E-5 23.9
MW-105 32.1
E-3 39.4
MW-106 89
MW-109 18.2
MW-112 12.8
MW-108 20.3
MW-111 21.2
MW-101 71.6
MW-107 26.4
MW-110 24.8
MW-102 35.8
E-1 19.8
MW-104 37.2
MW-123 23.8
E-2 33.7
MW-103 7.4
June 2018 Results - Selenium
PAL = 40 ug/L
MW-122 8.4 J
MW-120 15.7 J
MW-121 15.9 J
MW-115 6.5 J
MW-119 14.8 J
MW-114 5.6 J
MW-116 55.4 J
MW-118 21.8
MW-117 13.4
E-6 10
E-7 17.7
E-4 6
E-8 10.2
E-5 8.8
MW-105 12.8
E-3 14.9
MW-106 41.5
MW-109 11.4
MW-112 12.2
MW-108 12
MW-111 7.1
MW-101 14.9
MW-107 18.6
MW-110 10.4
MW-102 18
E-1 11.8
MW-104 13.7
MW-123 15
E-2 10.6
MW-103 6.6
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Figure 7-23
Selenium Groundwater Sampling Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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March 2018 Results - PCB-1260
PAL = 0.0078 ug/L
June 2018 Results - PCB-1260
PAL = 0.0078 ug/L
Figure 7-24
PCB-1260
Groundwater Sampling
Results
Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey
N
Legend
Buildings (Survey)
RIFS Groundwater
Sampling Results (ug/L)
Result not detected
Result detected < PAL
Result exceeds PAL
Notes:
1. See results tables for
qualifier definitions
0 60 120
Feet
1 inch = 120 feet
WOODARD &CURRAN
Project #: 0013620
Map Created: September 2018
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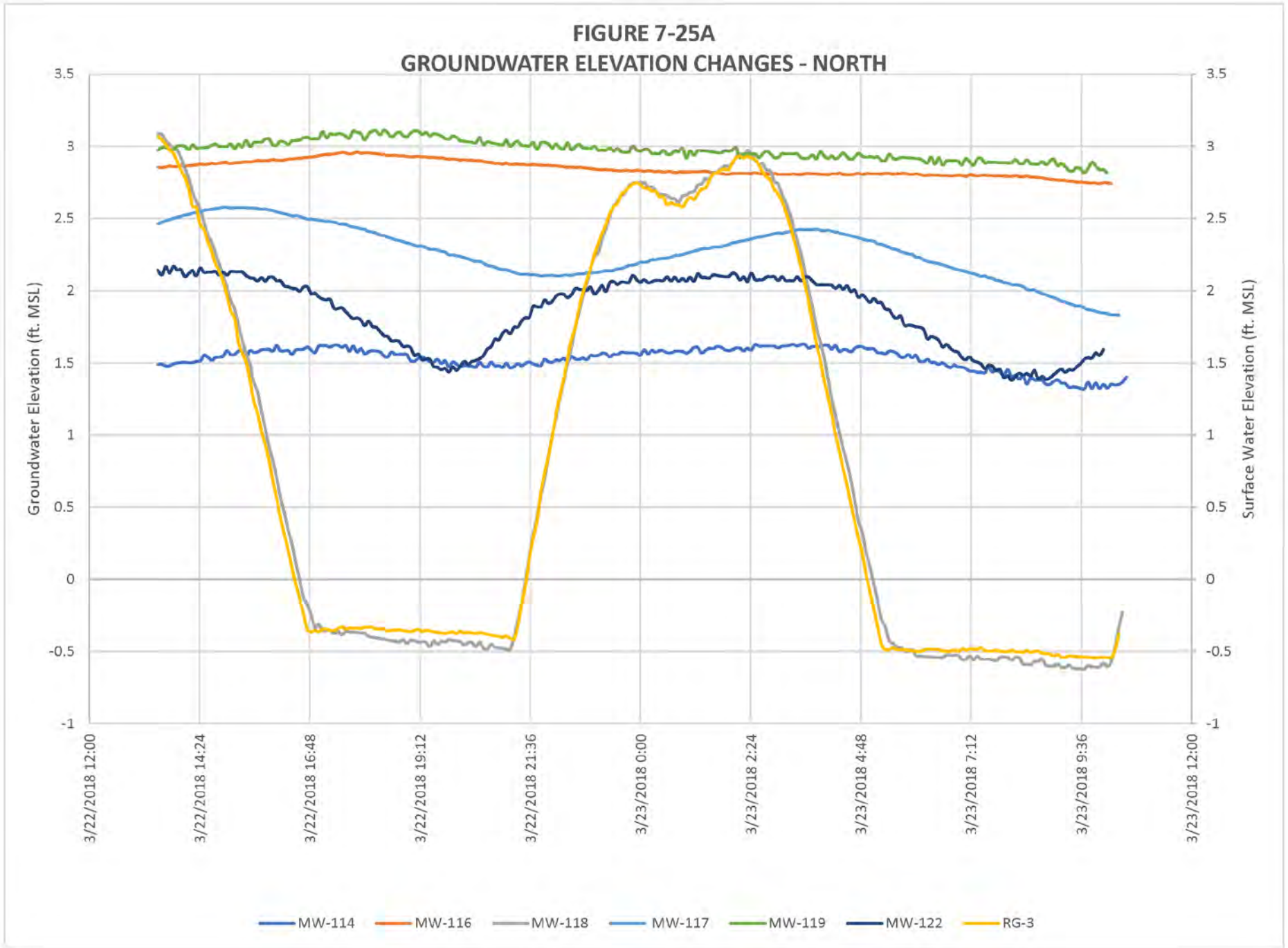


FIGURE 7-25A
GROUNDWATER ELEVATION CHANGES - NORTH
Groundwater Elevation (ft. MSL)
Surface Water Elevation (ft. MSL)
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
3/22/2018 12:00
3/22/2018 14:24
3/22/2018 16:48
3/22/2018 19:12
3/22/2018 21:36
3/23/2018 0:00
3/23/2018 2:24
3/23/2018 4:48
3/23/2018 7:12
3/23/2018 9:36
3/23/2018 12:00
MW-114
MW-116
MW-118
MW-117
MW-119
MW-122
RG-3

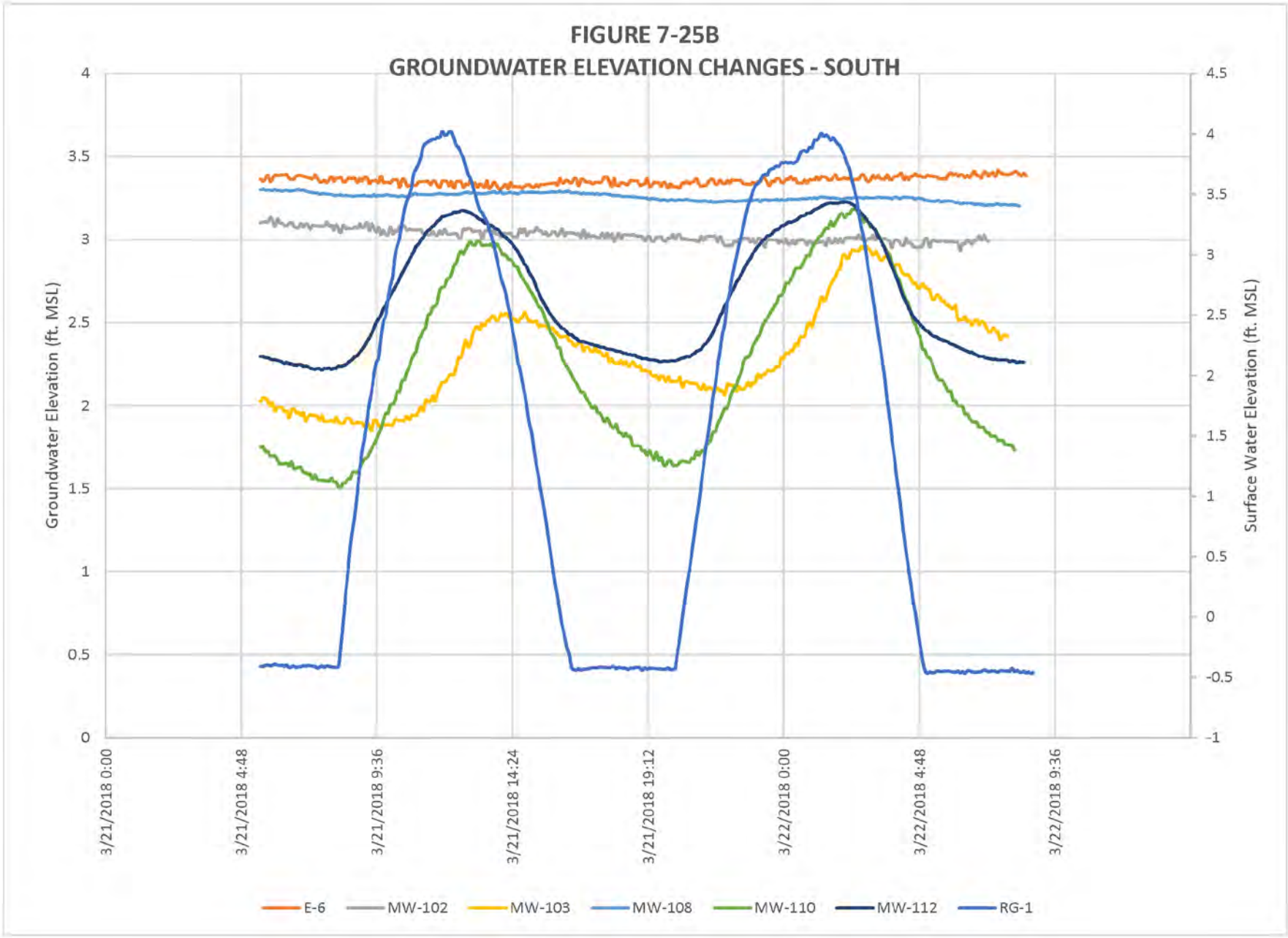


FIGURE 7-25B
GROUNDWATER ELEVATION CHANGES - SOUTH
Groundwater Elevation (ft. MSL)
Surface Water Elevation (ft. MSL)
4
3.5
3
2.5
2
1.5
1
0.5
0
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
3/21/2018 0:00
3/21/2018 4:48
3/21/2018 9:36
3/21/2018 14:24
3/21/2018 19:12
3/22/2018 0:00
3/22/2018 4:48
3/22/2018 9:36
E-6
MW-102
MW-103
MW-108
MW-110
MW-112
RG-1

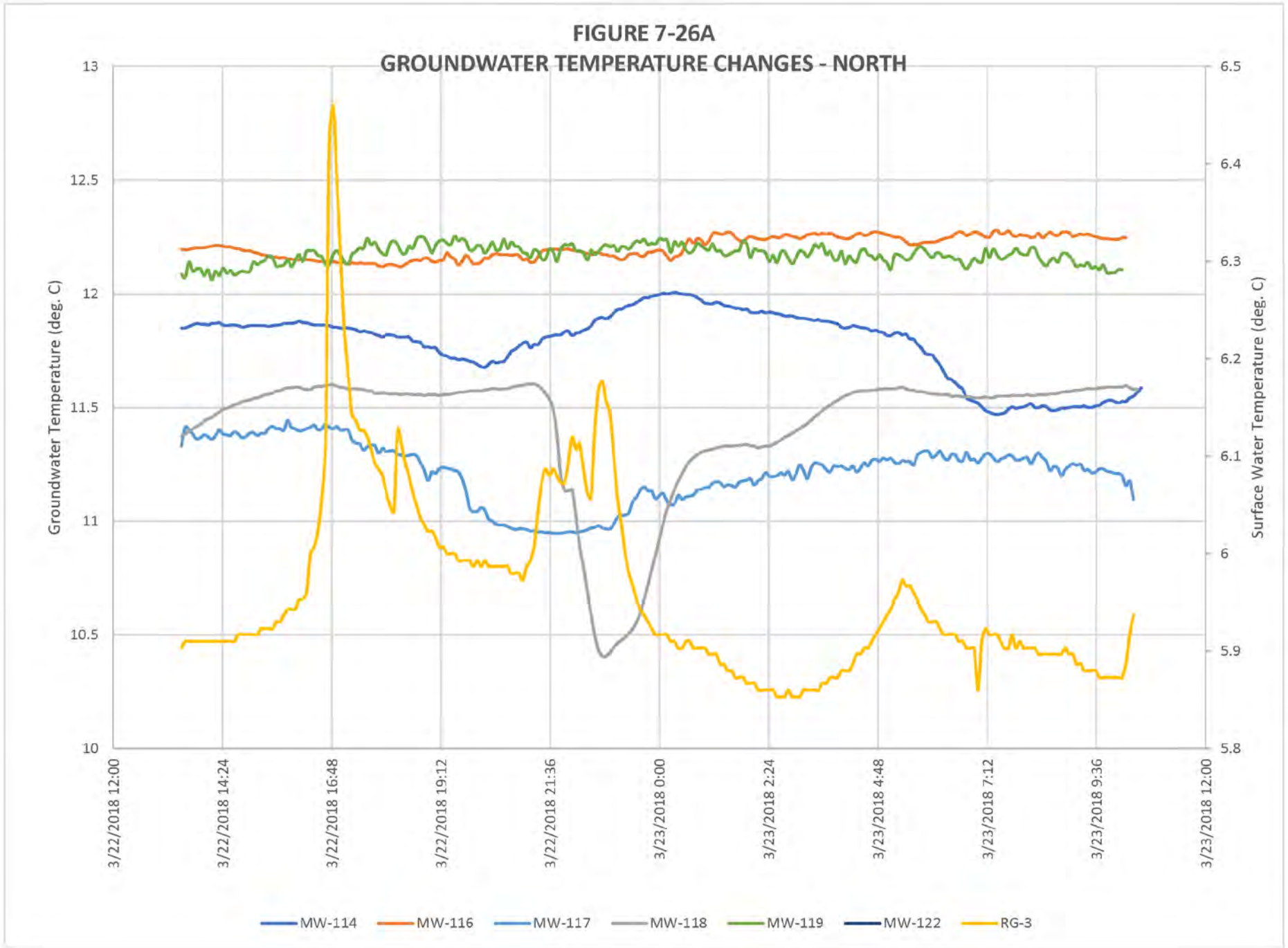


FIGURE 7-26A
GROUNDWATER TEMPERATURE CHANGES - NORTH
Groundwater Temperature (deg. C)
Surface Water Temperature (deg. C)
13
12.5
12
11.5
11
10.5
10
6.5
6.4
6.3
6.2
6.1
6
5.9
5.8
3/22/2018 12:00
3/22/2018 14:24
3/22/2018 16:48
3/22/2018 19:12
3/22/2018 21:36
3/23/2018 0:00
3/23/2018 2:24
3/23/2018 4:48
3/23/2018 7:12
3/23/2018 9:36
3/23/2018 12:00
MW-114
MW-116
MW-117
MW-118
MW-119
MW-122
RG-3

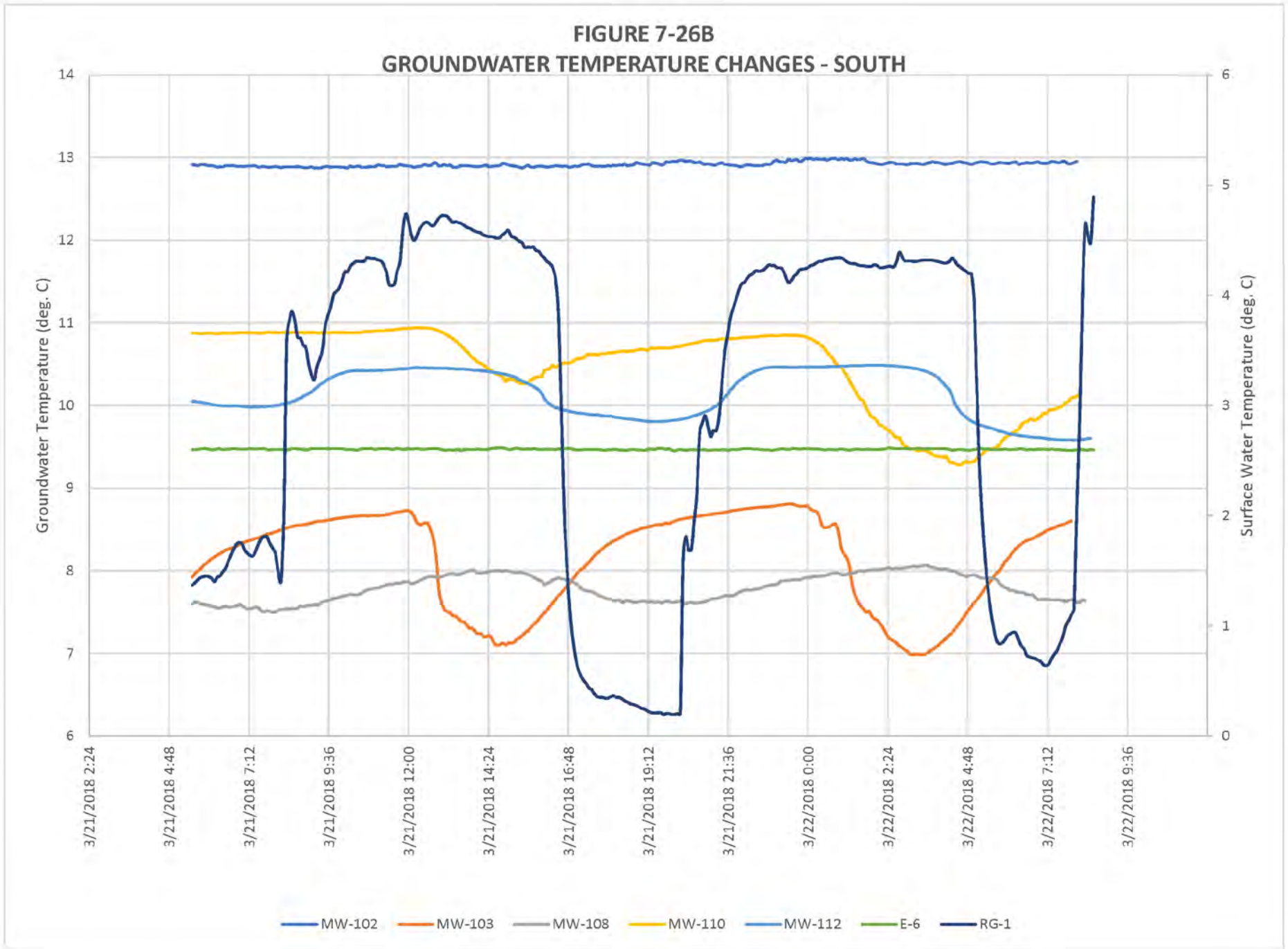
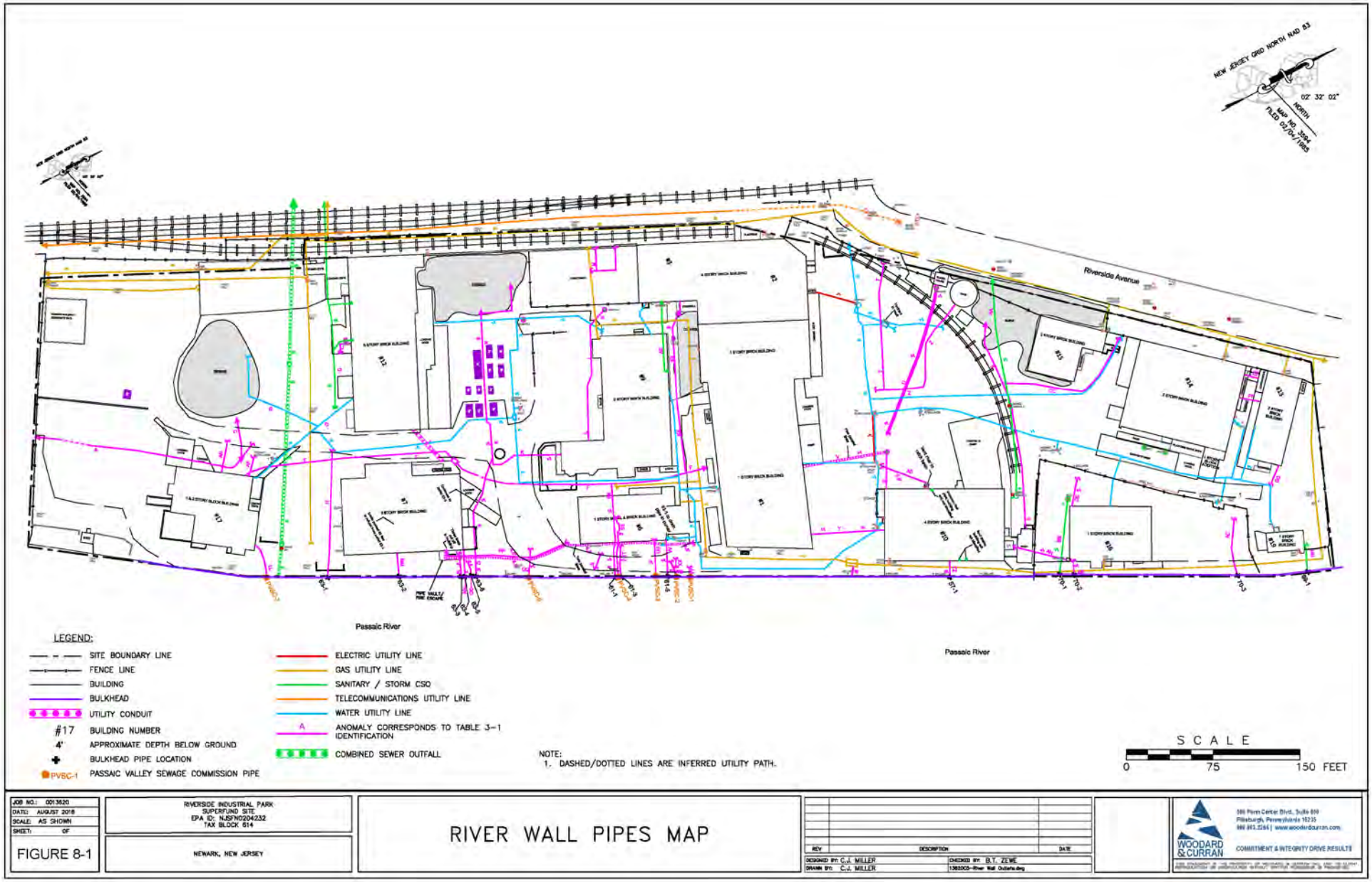
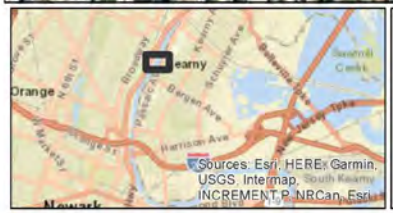


FIGURE 7-26B
GROUNDWATER TEMPERATURE CHANGES - SOUTH
Groundwater Temperature (deg. C)
Surface Water Temperature (deg. C)
14
13
12
11
10
9
8
7
6
6
5
4
3
2
1
0
3/21/2018 2:24
3/21/2018 4:48
3/21/2018 7:12
3/21/2018 9:36
3/21/2018 12:00
3/21/2018 14:24
3/21/2018 16:48
3/21/2018 19:12
3/21/2018 21:36
3/22/2018 0:00
3/22/2018 2:24
3/22/2018 4:48
3/22/2018 7:12
3/22/2018 9:36
MW-102
MW-103
MW-108
MW-110
MW-112
E-6
RG-1


NEW JERSEY GRID NORTH NAD 83
02° 32' 02"
NORTH
MAP NO. 3594
FILED 05/04/1965
Riverside Avenue
Passaic River
Passaic River
LEGEND:
SITE BOUNDARY LINE
FENCE LINE
BUILDING
BULKHEAD
UTILITY CONDUIT
#17 BUILDING NUMBER
4' APPROXIMATE DEPTH BELOW GROUND
BULKHEAD PIPE LOCATION
PVSC-1 PASSAIC VALLEY SEWAGE COMMISSION PIPE
ELECTRIC UTILITY LINE
GAS UTILITY LINE
SANITARY / STORM CSO
TELECOMMUNICATIONS UTILITY LINE
WATER UTILITY LINE
A ANOMALY CORRESPONDS TO TABLE 3-1 IDENTIFICATION
COMBINED SEWER OUTFALL
NOTE:
1. DASHED/DOTTED LINES ARE INFERRED UTILITY PATH.
SCALE
0 75 150 FEET
JOB NO.: 0013620
DATE: AUGUST 2018
SCALE: AS SHOWN
SHEET: OF
FIGURE 8-1
RIVERSIDE INDUSTRIAL PARK SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614
NEWARK, NEW JERSEY
RIVER WALL PIPES MAP
REV DESCRIPTION DATE
DESIGNED BY: C.J. MILLER
DRAWN BY: C.J. MILLER
CHECKED BY: B.T. ZEWE
WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS



Legend

- Approximate Sediment Sample Locations

300 Penn Center Boulevard | Suite 800
Pittsburgh, PA 15235
412-241-4500 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

Data Sources:

DRAWN BY: BRM	SCALE:
DATE: August 2016	DOC: PPG-LPR_Sediment-Core-Locations
	JOB NO.: 13620

Figure 9-1
Lower Passaic River
Sediment Sample Locations
Mile Point 6.30 to 7.55

N

0 200 400 800
Feet

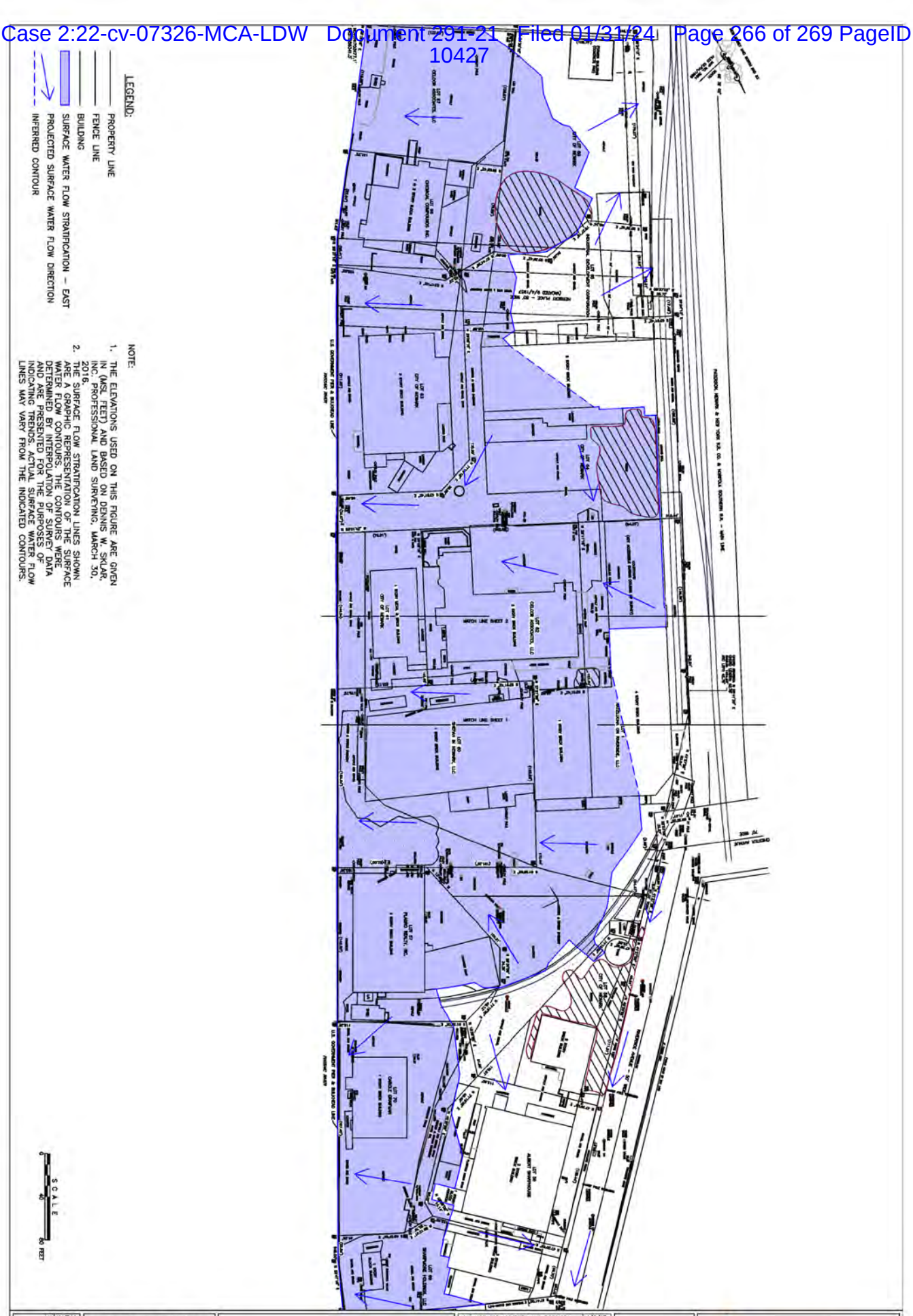


FIGURE 9-2

RIVERSIDE INDUSTRIAL PARK
SUPERFUND SITE
EPA ID: NJSFN0204232
TAX BLOCK 614

PPG INDUSTRIES, INC.
NEWARK, NEW JERSEY

PROJECTED SURFACE WATER FLOW DIRECTION

REV	DESCRIPTION	DATE
1	ADD BLD NUMBERS AND BORINGS	4/6/17
2	ADJUST LOCATIONS – FIELD CHANGES	11/1/17

DESIGNED BY: ——— CHECKED BY:
DRAWN BY: J.G.T. 1713-01.dwg

JOB NO.: 613960
DATE: 04-10-13
SCALE: 1" = 40'
SHEET: 1 OF 1

WOODARD & CURRAN
309 Penn Center Blvd., Suite 800
Pittsburgh, Pennsylvania 15235
800.883.3266 | www.woodardcurran.com
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Figure 10-1
VI Screening of Groundwater Results

Riverside Industrial Park Superfund Site
29 Riverside Avenue
City of Newark, New Jersey

Legend

- Buildings

VI Screening Results

- No results >
- March 2018 results >
- June 2018 results >
- Both results >

Note:
Groundwater results compared to USEPA Residential VISLs - see Table 10-1

0 50 100 Feet

1 inch = 100 feet

WOODARD &CURRAN

Project #: 0013620
Map Created: September 2018

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.

Figure 13-1: Scenarios for Potential Human Exposure
Riverside Industrial Park Superfund Site, Newark, NJ

● = Potentially complete pathway
○ = Pathway is not complete

		Routine Workers[1]	Landscaper[2]	Maintenance Workers[3]	Construction Workers[4]	Trespassers	Residents[5]	Off-Site Residents[6]
Soil[7]	Incidental Ingestion	●	●	●	●	●	●	○
	Dermal Contact	●	●	●	●	●	●	○
	Inhalation of Vapor	●	●	●	●	●	●	●
	Inhalation of Particulates	●	●	●	●	●	●	●
	Vapor Intrusion	●	○	○	○	○	●	○
Shallow Groundwater[8]	Incidental Ingestion	○	○	●	●	○	○	○
	Dermal Contact	○	○	●	●	○	○	○
	Inhalation of Vapor	○	○	●	●	○	○	○
	Vapor Intrusion	●	○	○	○	○	●	○
	Potable and Nonpotable Water Use[10]	●	○	○	○	○	●	○
Deep Groundwater[9]	Potable and Nonpotable Water Use	●	○	○	○	○	●	○

Notes:

1. Currently, routine workers are only present at Lots 1, 57, 59, 60, 62, 69, and 70. In the future, routine workers could potentially be present anywhere at the Site.

2. Potential exposure to surface soil may occur during landscaping activities, if the site is redeveloped in the future.

3. Potential exposures may occur at vacant and occupied lots during maintenance activities (e.g., utility repair).

4. Construction workers perform site redevelopment. If the Site is redeveloped in the future, construction workers could be exposed during site redevelopment activities that involve subsurface excavation.

5. The Site is currently zoned for industrial use. Residential land use at the Site in the future is also highly improbable since the Site is not zoned residential and the proposed redevelopment plan states the zoning will remain industrial. However, the BHHRA will include a hypothetical residential scenario which assumes the Site will have medium-density residential units like those west of McCarty Highway.

6. On-site shallow groundwater does not flow under adjacent residential properties. Therefore, the only potential exposure for off-site residents is to airborne dust and vapors blown off-site from unpaved on-site areas. This exposure is expected to be minimal since the residences nearest the Site are across McCarty Highway (which is elevated) and uphill from the Site.

7. Routine workers, landscapers, trespassers, and residents are only exposed to surface soil in unpaved areas via incidental ingestion and dermal exposure. Since soil that is currently in the subsurface might become surface soil during future site redevelopment, exposure to soil from any depth will be included in the risk assessment.

8. Shallow groundwater is groundwater in the fill above the silty clay layer.

9. Deep groundwater is groundwater in the aquifer beneath the silty clay layer (> 14 feet bgs).

10. Groundwater is not currently being used at the Site. Potable and nonpotable use of shallow groundwater in the future is highly improbable since the Site and surrounding area use water supplied from the City and the shallow groundwater is brackish. However, the BHHRA will include a comparison of the groundwater data to the NJ Class IIA groundwater quality standards and drinking water standards.

[redacted]

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